Final Environmental Impact Statement and Proposed Land-use Plan Amendments for the Energy Gateway South Transmission Project

BLM/WY/PL-14/009+5001
Case Files: WYW-174597
COC-72907
UTU-87237

May 2016

Volume I-C

Appendix J through Appendix P

BLM

Wyoming State Office

National System of Public Lands
U.S. Department of the Interior
Bureau of Land Management

U.S. Department of the Interior
Bureau of Land Management

Final Environmental Impact Statement and Proposed Land-use Plan Amendments for the Energy Gateway South Transmission Project

BLM/WY/PL-14/009+5001

Case Files
Wyoming: WYW-174597
Colorado: COC-72907
Utah: UTU-87237

Volume I-C

BLM Wyoming State Office
5353 Yellowstone Road
Cheyenne, Wyoming 82009

Cooperating Agencies
U.S. Forest Service – Intermountain Region
U.S. Army Corps of Engineers – South Pacific Division
U.S. Army Environmental Center
U.S. Department of Defense – Navy Region Southwest
Bureau of Indian Affairs – Western Region
U.S. Fish and Wildlife Service – Mountain-Prairie Region
National Park Service
Utah Reclamation Mitigation and Conservation Commission
State of Wyoming
State of Colorado
State of Utah
Carbon and Sweetwater counties, Wyoming
Mesa, Moffat, and Rio Blanco counties, Colorado
Carbon, Duchesne, Emery, Grand, Juab, Sanpete, Uintah, and Wasatch counties, Utah
Wyoming Conservation Districts (Little Snake River, Medicine Bow, Saratoga-Encampment-Rawlins, Sweetwater County)

May 2016

BLM Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

Appendix J
Biological Resources Supporting Data

TABLE OF CONTENTS

Appendix J – Biological Resources Supporting Data J-1
- J.1 Land Cover Categories in the Project Area J-1
  - J.1.1 Agriculture J-3
  - J.1.2 Alpine J-4
  - J.1.3 Aspen J-5
  - J.1.4 Barren and Sparsely Vegetated J-6
  - J.1.5 Big Sagebrush J-8
  - J.1.6 Developed/Disturbed J-10
  - J.1.7 Grassland J-11
  - J.1.8 Invasive J-15
  - J.1.9 Montane Forest J-15
  - J.1.10 Mountain Shrub J-20
  - J.1.11 Pinyon-Juniper J-22
  - J.1.12 Ponderosa Pine J-24
  - J.1.13 Riparian J-25
  - J.1.14 Shrub/Shrub Steppe J-28
  - J.1.15 Water J-31
  - J.1.16 Wetlands J-31
- J.2 Noxious Weeds in the Project Area J-34
- J.3 Migratory Birds J-39
- J.4 Special Status Species Lists J-39
  - J.4.1 Federal Threatened, Endangered, and Candidate Species J-39
  - J.4.2 State Protected Species J-40
  - J.4.3 Bureau of Land Management Sensitive Species J-40
  - J.4.4 U.S. Forest Service Sensitive Species J-40
  - J.4.5 U.S. Forest Service Management Indicator Species J-40
- J.5 Special Status Species Tables J-40
- J.6 Special Status Species Accounts J-61
  - J.6.1 Special Status Plants J-61
    - J.6.1.1 Federally Listed Threatened, Endangered, and Candidate Plant Species J-61
    - J.6.1.2 Bureau of Land Management, U.S. Forest Service, and State-Sensitive Plant Species J-157
  - J.6.2 Special Status Fish and Wildlife J-167
    - J.6.2.1 Federally Listed Threatened, Endangered, Candidate, and Proposed Fish and Wildlife Species J-167
    - J.6.2.2 Bureau of Land Management, U.S. Forest Service, and State-Sensitive Fish and Wildlife Species J-205
    - J.6.2.3 U.S. Forest Service Management Indicator Species J-236
- J.7 Seasonal Restrictions for Special Status Plants J-238
- J.8 Seasonal Restrictions for Wildlife J-238
- J.9 Surface Use Restrictions for Biological Resources J-271
- J.10 References J-325

List of Tables

Table J-1 Land Cover Categories in the Project Area J-1
Table J-2 State- and County-listed Noxious Weeds in Wyoming for Lands in the Project Area J-34
Table J-3 Designated Noxious Weeds in the State of Colorado J-35
Table J-4 State- and County-listed Noxious Weeds in Utah for Bureau of Land Management Lands in the Project Area J-36
Table J-5 State- and County-listed Noxious Weeds in Utah for U.S. Forest Service Lands in the Project Area J-38
Table J-6 Status of Migratory Bird Species Identified as Bird Species of Concern in the Project Area J-41
Table J-7 Natural History and Threats for Migratory Bird Species Identified as Bird Species of Concern in the Project Area J-47
Table J-8 Special Status Plant Species Carried Forward for Analysis J-62
Table J-9 Special Status Plant Species Not Carried Forward for Analysis J-71
Table J-10 Special Status Wildlife Species Carried Forward for Analysis J-80
Table J-11 Special Status Wildlife Species Not Carried Forward for Analysis J-119
Table J-12 Seasonal Restrictions in Sensitive Habitats J-240
Table J-13 Spatial and Seasonal Buffers for Breeding Raptors in Wyoming J-265
Table J-14 Recommended Spatial and Seasonal Buffers for Breeding Raptors in Colorado J-266
Table J-15 Nesting Periods and Recommended Buffers for Raptors in Utah J-268
Table J-16 No Surface Occupancy and No Surface Disturbance Restrictions for Biological Resources from Applicable Bureau of Land Management, U.S. Forest Service, and Other Plans J-272
Table J-17 Conditional Surface Use Restrictions For Biological Resources from Applicable Bureau of Land Management, U.S. Forest Service, and Other Plans J-292

APPENDIX J – BIOLOGICAL RESOURCES SUPPORTING DATA

Information presented in this appendix was compiled to assist in completion of biological resource inventories and impacts analysis included in Chapters 3 and 4.

J.1 Land Cover Categories in the Project Area

Land cover in the Energy Gateway South Transmission Project (Project) area was identified using data from the National Land Cover Gap Analysis Project (GAP) dataset (U.S. Geological Survey [USGS] 2010). The National Land Cover GAP dataset is compiled from both the Northwest GAP (University of Idaho 2012 and the Southwest GAP datasets (Lowry et al. 2005).

A total of 86 GAP land cover categories were identified in the Project area (Table J-1). Descriptions of the GAP land cover categories in the Project area were obtained from NatureServe's Ecological System classification descriptions (NatureServe 2012) or the GAP Level Three Land Cover Category Descriptions (University of Idaho 2012). Descriptions of each land cover category follow Table J-1. Descriptions of altered and disturbed land cover and land use classes (e.g., agriculture, developed, etc.) were adopted from the National Land Cover Dataset 2001 legend (Homer et al. 2004). National Wetlands Inventory (NWI) data (U.S. Fish and Wildlife Service [FWS] 2012a) was used concurrently with GAP data to help identify freshwater wetlands in the wetlands primary vegetation community type. Noxious weed data from Bureau of Land Management (BLM) Field Offices and U.S. Forest Service (USFS) Ranger Districts also were used concurrently with the GAP data to supplement identification of the invasive primary vegetation community type.

For the purposes of this Environmental Impact Statement (EIS), the 86 GAP land cover categories were consolidated and reclassified into 16 primary vegetation communities, also referred to as primary habitat types (Table J-1). This reclassification was done based on similarities of vegetative species composition, structure, and general topographic positioning of certain land cover categories.

TABLE J-1
LAND COVER CATEGORIES IN THE PROJECT AREA

Primary Vegetation Communities (Reclassification)	Land Cover Categories (Gap Analysis Project or Other)
Agriculture	Cultivated cropland
	Pasture/hay
Alpine	North American alpine ice field
	Rocky Mountain alpine bedrock and scree
	Rocky Mountain alpine dwarf-shrubland
	Rocky Mountain alpine fell-field
	Rocky Mountain alpine-montane wet meadow
	Rocky Mountain dry tundra
Aspen	Inter-Mountain Basins aspen-mixed conifer forest and woodland
	Rocky Mountain aspen forest and woodland

TABLE J-1
LAND COVER CATEGORIES IN THE PROJECT AREA

Primary Vegetation Communities (Reclassification)	Land Cover Categories (Gap Analysis Project or Other)
Barren/Sparsely Vegetated (less than 10 percent cover)	Colorado Plateau mixed bedrock canyon and tableland
	Inter-Mountain Basins active and stabilized dune
	Inter-Mountain Basins cliff and canyon
	Inter-Mountain Basins playa
	Inter-Mountain Basins shale badland
	Rocky Mountain cliff, canyon, and massive bedrock
	Western Great Plains cliff and outcrop
Big Sagebrush	Inter-Mountain Basins big sagebrush shrubland
	Inter-Mountain Basins big sagebrush steppe
	Inter-Mountain Basins montane sagebrush steppe
Developed/Disturbed	Developed, high intensity
	Developed, low intensity
	Developed, medium intensity
	Developed, open space
	Disturbed, non-specific
	Disturbed/successional – recently chained pinyon-juniper
	Quarries, mines, gravel pits, and oil wells
	Recently burned
	Recently logged areas
Grassland	Inter-Mountain Basins semi-desert grassland
	Northern Rocky Mountain lower montane, foothill, and valley grassland
	Northwestern Great Plains mixed grass prairie
	Rocky Mountain subalpine-montane mesic meadow
	Southern Rocky Mountain montane-subalpine grassland
	Western Great Plains sand prairie
Invasive	Introduced upland vegetation – annual grassland
	Introduced upland vegetation – perennial grassland and forbland
	Introduced upland vegetation – treed
Montane Forest	Middle Rocky Mountain montane Douglas-fir forest and woodland
	Northern Rocky Mountain dry-mesic montane mixed conifer forest
	Northern Rocky Mountain mesic montane mixed conifer forest
	Rocky Mountain lodgepole pine forest
	Rocky Mountain subalpine dry-mesic spruce-fir forest and woodland
	Rocky Mountain subalpine mesic spruce-fir forest and woodland
	Rocky Mountain subalpine-montane limber-bristlecone pine woodland
	Southern Rocky Mountain dry-mesic montane mixed conifer forest and woodland
	Southern Rocky Mountain mesic montane mixed conifer forest and woodland
Mountain Shrub	Harvested forest-shrub regeneration
	Inter-Mountain Basins curl-leaf mountain-mahogany woodland and shrubland
	Northern Rocky Mountain montane-foothill deciduous shrubland
	Northern Rocky Mountain subalpine deciduous shrubland
	Rocky Mountain gambel oak-mixed montane shrubland
	Rocky Mountain lower montane-foothill shrubland

TABLE J-1
LAND COVER CATEGORIES IN THE PROJECT AREA

Primary Vegetation Communities (Reclassification)	Land Cover Categories (Gap Analysis Project or Other)
Pinyon-Juniper	Colorado Plateau pinyon-juniper shrubland
	Colorado Plateau pinyon-juniper woodland
	Great Basin pinyon-juniper woodland
	Inter-Mountain Basins juniper savanna
	Rocky Mountain foothill limber pine-juniper woodland
	Southern Rocky Mountain pinyon-juniper woodland
Ponderosa Pine	Northern Rocky Mountain foothill conifer wooded steppe
	Southern Rocky Mountain ponderosa pine woodland
Riparian	Great Basin foothill and lower montane riparian woodland and shrubland
	Introduced riparian and wetland vegetation
	Northwestern Great Plains riparian
	Rocky Mountain bigtooth maple ravine woodland
	Rocky Mountain lower montane riparian woodland and shrubland
	Rocky Mountain subalpine-montane riparian shrubland
	Rocky Mountain subalpine-montane riparian woodland
	Western Great Plains floodplain
	Western Great Plains riparian woodland and shrubland
	National Wetlands Inventory data
Shrub/Shrub Steppe	Colorado Plateau blackbrush-mormon-tea shrubland
	Colorado Plateau mixed low sagebrush shrubland
	Great Basin xeric mixed sagebrush shrubland
	Inter-Mountain Basins greasewood flat
	Inter-Mountain Basins mat saltbush shrubland
	Inter-Mountain Basins mixed salt desert scrub
	Inter-Mountain Basins semi-desert shrub steppe
	Southern Colorado Plateau sand shrubland
	Wyoming basins dwarf sagebrush shrubland and steppe
Water	Open water (fresh)
Wetland	Great Plains prairie pothole
	Inter-Mountain Basins interdunal swale wetland
	North American arid west emergent marsh
	Rocky Mountain subalpine-montane fen
	Western Great Plains closed depression wetland
	Western Great Plains open freshwater depression wetland
	Western Great Plains saline depression wetland

J.1.1 Agriculture

Cultivated Cropland

Cultivated croplands are areas used for the production of annual crops (e.g., corn, soybeans, vegetables, tobacco, and cotton) and perennial woody crops (e.g., orchards and vineyards). Crop vegetation accounts for greater than 20 percent of total vegetation. This class also includes all land being actively tilled (University of Idaho 2012).

Pasture/Hay

Pasture/hay areas include grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20 percent of total vegetation (University of Idaho 2012).

J.1.2 Alpine

North American Alpine Ice Field

This widespread ecological system is composed of unvegetated landscapes of annual/perennial ice and snow and exposed rock and rubble at the highest elevations, where snowfall exceeds melting. The primary ecological processes include snow/ice retention and/or decadal movement (active moraines and till), wind desiccation, and permafrost. The snowpack/ice field never melts or, if so, then for only a few weeks. The alpine substrate/ice field ecological system is part of the alpine mosaic consisting of alpine tundra dry meadow, wet meadow, fell-fields, and dwarf-shrubland (University of Idaho 2012).

Rocky Mountain Alpine Bedrock and Scree

This ecological system is restricted to the highest elevations of the Rocky Mountains, from Alberta and British Columbia south into New Mexico, west into the highest mountain ranges of the Great Basin. It is composed of barren and sparsely vegetated alpine substrates, typically including both bedrock outcrop and scree slopes, with nonvascular- (lichen) dominated communities. Exposure to desiccating winds, rocky and sometimes unstable substrates, and a short growing season limit plant growth. There can be sparse cover of forbs, grasses, lichens and low shrubs (NatureServe 2012).

Rocky Mountain Alpine Dwarf-Shrubland

This widespread ecological system occurs above upper timberline throughout the Rocky Mountain cordillera, including alpine areas of ranges in Utah and Nevada, and north into Canada. Elevations are above 11,000 feet (3,360 meters) in the Colorado Rockies but drop to less than 6,900 feet (2,100 meters) in northwestern Montana and in the mountains of Alberta. This system occurs in areas of level or concave glacial topography with late-lying snow and subirrigation from surrounding slopes. Soils have become relatively stabilized in these sites, are moist but well-drained, strongly acidic, and often with substantial peat layers. Vegetation in these areas is controlled by snow retention, wind desiccation, permafrost, and a short growing season. This ecological system is characterized by a semi-continuous layer of ericaceous dwarf-shrubs or dwarf willows that form a heath-type ground cover less than 1.64 feet (0.5 meter) in height. Dense tuffs of graminoids and scattered forbs occur. *Dryas octopetala* or *Dryas integrifolia* communities are not included here, except for one very moist association, because they occur on more windswept and drier sites than the heath communities. In these communities *Cassiope mertensiana, Salix arctica, Salix reticulata*, *Salix vestita*, or *Phyllodoce empetriformis* can be dominant shrubs. *Vaccinium* spp., *Ledum glandulosum, Phyllodoce glanduliflora*, and *Kalmia microphylla* also may be shrub associates. The herbaceous layer is a mixture of forbs and graminoids, especially sedges, including, *Erigeron* spp., *Luetkea pectinata, Antennaria lanata, Oreostemma alpigenum (= Aster alpigenus), Pedicularis* spp., *Castilleja* spp., *Deschampsia caespitosa, Caltha leptosepala*, *Erythronium* spp., *Juncus parryi, Luzula piperi, Carex spectabilis, Carex nigricans*, and *Polygonum bistortoides*. Fell-fields often intermingle with the alpine dwarf-shrubland (NatureServe 2012).

Rocky Mountain Alpine Fell-Field

This ecological system is found discontinuously at alpine elevations throughout the Rocky Mountains, west into the mountainous areas of the Great Basin, and north into the Canadian Rockies. Small areas are represented in the west side of the Okanagan Ecoregion in the eastern Cascades. These are wind-scoured fell-fields that are free of snow in the winter, such as ridgetops and exposed saddles, exposing the plants to severe environmental stress. Soils on these windy unproductive sites are shallow, stony, low in organic matter, and poorly developed; wind deflation often results in a gravelly pavement. Most fell-field plants are cushioned or matted, frequently succulent, flat to the ground in rosettes and often densely haired and thickly cutinized. Plant cover is 15 to 50 percent, while exposed rocks make up the rest. Fell-fields are usually in or adjacent to alpine tundra dry meadows. Common species include *Arenaria capillaris, Geum rossii, Kobresia myosuroides, Minuartia obtusiloba, Myosotis asiatica, Paronychia pulvinata, Phlox pulvinata, Sibbaldia procumbens, Silene acaulis, Trifolium dasyphyllum*, and *Trifolium parryi* (NatureServe 2012).

Rocky Mountain Alpine-Montane Wet Meadow

These are high-elevation communities found throughout the Rocky Mountains and Intermountain regions, dominated by herbaceous species found on wetter sites with very low-velocity surface and subsurface flows. They range in elevation from montane to alpine at 3,300 to 11,800 feet (1,000 to 3,600 meters). These types occur as large meadows in montane or subalpine valleys, as narrow strips bordering ponds, lakes, and streams, and along toeslope seeps. They typically are found on flat areas or gentle slopes but also may occur on subirrigated sites with slopes up to 10 percent. In alpine regions, sites typically are small depressions located below late-melting snow patches or on snowbeds. Soils of this system may be mineral or organic. In either case, soils show typical hydric soil characteristics, including high organic content and/or low chroma and redoximorphic features. This system often occurs as a mosaic of several plant associations, often dominated by graminoids, including *Calamagrostis stricta, Caltha leptosepala, Cardamine cordifolia, Carex illota, Carex microptera, Carex nigricans, Carex scopulorum, Carex utriculata, Carex vernacula, Deschampsia caespitosa, Eleocharis quinqueflora, Juncus drummondii, Phippsia algida, Rorippa alpina, Senecio triangularis, Trifolium parryi*, and *Trollius laxus*. Often alpine dwarf-shrublands, especially those dominated by Salix, are immediately adjacent to the wet meadows. Wet meadows are tightly associated with snowmelt and typically not subjected to high-disturbance events such as flooding (NatureServe 2012).

Rocky Mountain Dry Tundra

Alpine turf occurs above upper treeline throughout the Rocky Mountains, including alpine areas in Utah and Nevada. It is found on gentle to moderate slopes, flat ridges, and margins of alpine valleys where the soil has become relatively stable. These wind-swept sites retain little snow cover and are relatively harsh dry habitats. The plant cover is a short, often dense, diverse mixture of sod-forming grasses and sedges, and mat-forming herbs (cushion plants). Common plants include blackroot sedge, dry-spike sedge, Scirpus-like sedge, arctic bluegrass, Ross' avens, Pacific bog sedge, cushion phlox, Parry's clover, and Uinta clover. Because of the very short growing season, summer flowers are often abundant (University of Idaho 2012).

J.1.3 Aspen

Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland

This ecological system occurs on montane slopes and plateaus in Utah, western Colorado, northern Arizona, eastern Nevada, southern Idaho, western Wyoming, and in north-central Montana in the Big Snowy Mountains. It also occurs in localized settings in the Klamath Mountains of California, as well as in the Sierra Nevada and adjacent Great Basin mountains (Inyo, White, Warner, and Modoc Plateau). Elevations range from 5,600 to 9,200 feet (1,700 to 2,800 meters). Occurrences are typically on gentle to steep slopes on any aspect but often are found on clay-rich soils in intermontane valleys. Soils are derived from alluvium, colluvium, and residuum from a variety of parent materials but most typically occur on sedimentary rocks. The tree canopy is composed of a mix of deciduous and coniferous species, codominated by *Populus tremuloides* and conifers, including *Pseudotsuga menziesii, Abies concolor, Abies lasiocarpa, Abies magnifica, Picea engelmannii, Picea glauca X engelmannii, Picea pungens, Pinus contorta, Pinus flexilis, Pinus jeffreyi, Pinus contorta* var. *murrayana*, and *Pinus ponderosa*. As the occurrences age, *Populus tremuloides* is slowly reduced until the conifer species become dominant. Common shrubs include *Amelanchier alnifolia, Prunus virginiana, Acer grandidentatum, Symphoricarpos oreophilus, Juniperus communis, Paxistima myrsinites, Rosa woodsii, Spiraea betulifolia, Symphoricarpos albus*, or *Mahonia repens*. Herbaceous species include *Bromus carinatus, Calamagrostis rubescens, Carex geyeri, Elymus glaucus, Poa* spp., and *Achnatherum, Hesperostipa, Nassella*, and/or *Piptochaetium* spp. (= *Stipa* spp.), *Achillea millefolium, Arnica cordifolia, Asteraceae* spp., *Erigeron* spp., *Galium boreale, Geranium viscosissimum, Lathyrus* spp., *Lupinus argenteus, Mertensia arizonica, Mertensia lanceolata, Maianthemum stellatum, Osmorhiza berteroi (= Osmorhiza chilensis)*, and *Thalictrum fendleri*. Most occurrences at present represent a late-seral stage of aspen changing to a pure conifer occurrence. Nearly a hundred years of fire suppression and livestock grazing have converted much of the pure aspen occurrences to the present-day aspen-conifer forest and woodland ecological system. This is the typical meadow edge aspen-conifer setting in the Sierra Nevada where frequently, due to fire suppression, the conifers are replacing aspens (NatureServe 2012).

Rocky Mountain Aspen Forest and Woodland

This widespread ecological system is more common in the southern and central Rocky Mountains but occurs in the montane and subalpine zones throughout much of the western United States and north into Canada. An eastern extension occurs along the Rocky Mountains foothill front, in mountain islands in Montana (Big Snowy and Highwood mountains), and the Black Hills of South Dakota. In California, this system is only found on the east side of the Sierra Nevada adjacent to the Great Basin. Large stands are found in the Inyo and White mountains, while small stands occur on the Modoc Plateau. In western Alberta, it occurs only in the Upper Foothills subregion and north of three transitions to Western North American Boreal Mesic Birch-Aspen Forest. Elevations generally range from 5,000 to 10,000 feet (1,525 to 3,050 meters), but occurrences can be found at lower elevations in some regions, especially in the Canadian Rockies. Distribution of this ecological system is primarily limited by adequate soil moisture required to meet its high evapotranspiration demand. Secondarily, it is limited by the length of the growing season or low temperatures. These are upland forests and woodlands dominated by *Populus tremuloides* without a significant conifer component (less than 25 percent relative tree cover). The understory structure may be complex with multiple shrub and herbaceous layers or simple with just an herbaceous layer. The herbaceous layer may be dense or sparse, dominated by graminoids or forbs. In California, *Symphyotrichum spathulatum (= Aster occidentalis)* is a common forb. Associated shrub species include *Symphoricarpos* spp., *Rubus parviflorus, Amelanchier alnifolia*, and *Arctostaphylos uva-ursi*. Occurrences of this system originate and are maintained by stand-replacing disturbances such as avalanches, crown fire, insect outbreak, disease and windthrow, or clearcutting by man or beaver, in the matrix of conifer forests. It differs from Northwestern Great Plains Aspen Forest and Parkland, which is limited to plains environments (NatureServe 2012).

J.1.4 Barren and Sparsely Vegetated

Colorado Plateau Mixed Bedrock Canyon and Tableland

The distribution of this ecological system is centered on the Colorado Plateau where it is composed of barren and sparsely vegetated landscapes (generally less than 10 percent plant cover) of steep cliff faces, narrow canyons, and open tablelands of predominantly sedimentary rocks, such as sandstone, shale, and limestone. Some eroding shale layers similar to Inter-Mountain Basins Shale Badland may be interbedded between the harder rocks. The vegetation is characterized by very open tree canopy or scattered trees and shrubs with a sparse herbaceous layer. Common species include *Pinus edulis, Pinus ponderosa, Juniperus* spp., *Cercocarpus intricatus*, and other short-shrub and herbaceous species, utilizing moisture from cracks and pockets where soil accumulates (NatureServe 2012).

Inter-Mountain Basins Active and Stabilized Dune

This ecological system occurs in the Intermountain western United States on basins, valleys, and plains. Often it is composed of a mosaic of migrating, bare dunes; anchored dunes with sparse to moderately dense vegetation (less than 10 to 30 percent canopy cover); and stabilized dunes. The system is defined by the presence of migrating dunes or, where the dunes are entirely anchored or stabilized, evidence that the substrate is eolian and not residual, that the vegetation is early-seral or mid-seral, and that the substrate is likely to become actively migrating again with disturbance or increased aridity. In the Colorado Plateau, there are many small active and partially vegetated dunes along some of the larger washes and playas (where sand is blown out of the wash and forms dunes) and some larger dunes such as Coral Pink Sand Dunes in southwestern Utah. Substrates are usually eolian sand; but small dunes composed of silt and clay downwind from playas in the Wyoming Basins, which usually support greasewood vegetation, also are included here. Species occupying these environments often are adapted to shifting, coarse-textured substrates (usually quartz sand) and form patchy or open grasslands, shrublands or steppe, and occasionally woodlands. Vegetation varies and may be composed of *Achnatherum hymenoides, Artemisia filifolia, Artemisia tridentata* ssp. *tridentata, Atriplex canescens, Ephedra* spp., *Chrysothamnus viscidiflorus, Coleogyne ramosissima, Ericameria nauseosa, Hesperostipa comata, Leymus flavescens, Muhlenbergia pungens, Psoralidium lanceolatum, Purshia tridentata, Redfieldia flexuosa, Sporobolus airoides, Sarcobatus vermiculatus, Tetradymia tetrameres*, or *Tiquilia* spp. Herbaceous species such as *Achnatherum hymenoides, Redfieldia flexuosa*, and *Psoralidium lanceolatum* are characteristic of early-seral vegetation through much of this system's range. Shrubs are commonly dominant on mid- to late-seral stands, and *Ericameria nauseosa* can be found at any stage (NatureServe 2012).

Inter-Mountain Basins Cliff and Canyon

This ecological system ranges from Wyoming and Utah west to the Pacific states. It is found from foothill to subalpine elevations and includes barren and sparsely vegetated landscapes (generally less than 10 percent plant cover) of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous, sedimentary, and metamorphic bedrock types. Also included is vegetation of unstable scree and talus slopes that typically occurs below cliff faces. Widely scattered trees and shrubs may include *Abies concolor, Pinus edulis, Pinus flexilis, Pinus monophylla, Juniperus* spp., *Artemisia tridentata, Purshia tridentata, Cercocarpus ledifolius, Ephedra* spp., *Holodiscus discolor*, and other species often common in adjacent plant communities (NatureServe 2012).

Inter-Mountain Basins Playa

This ecological system is composed of barren and sparsely vegetated playas (generally less than 10 percent plant cover) found in the Intermountain western United States. Salt crusts are common throughout, with small saltgrass beds in depressions and sparse shrubs around the margins. These systems are intermittently flooded. The water is prevented from percolating through the soil by an impermeable soil subhorizon and is left to evaporate. Soil salinity varies greatly with soil moisture and greatly affects species composition. Characteristic species may include *Allenrolfea occidentalis, Sarcobatus vermiculatus, Grayia spinosa, Puccinellia lemmonii, Leymus cinereus, Distichlis spicata*, and/or *Atriplex* spp (NatureServe 2012).

Inter-Mountain Basins Shale Badland

This widespread ecological system of the Intermountain western United States is composed of barren and sparsely vegetated substrates (greater than 10 percent plant cover) typically derived from marine shales but also includes substrates derived from siltstones and mudstones (clay). In southern Wyoming, the shales are not marine in origin, but often have bentonite derived from volcanic ash deposition that occurred during several eruptions of the Yellowstone volcanic fields. Landforms typically are rounded hills and plains that form a rolling topography. The harsh soil properties and high rate of erosion and deposition are driving environmental variables supporting sparse dwarf-shrubs (e.g., *Atriplex corrugata, Atriplex gardneri, Artemisia pedatifida,* and herbaceous vegetation) (NatureServe 2012).

Rocky Mountain Cliff, Canyon, and Massive Bedrock

This ecological system of barren and sparsely vegetated landscapes (generally greater than 10 percent plant cover) is found from foothill to subalpine elevations on steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous (intrusives), sedimentary, and metamorphic bedrock types. It is located throughout the Rocky Mountains and northeastern Cascade Ranges in North America. Also included are unstable scree and talus slopes that typically occur below cliff faces. In general these are the dry sparsely vegetated places on a landscape. The biota on them reflects what is surrounding them, unless it is an extreme parent material. There may be small patches of dense vegetation, but it typically includes scattered trees and/or shrubs. Characteristic trees includes species from the surrounding landscape, such as *Pseudotsuga menziesii, Pinus ponderosa, Pinus flexilis, Populus tremuloides, Abies concolor, Abies lasiocarpa,* or *Pinus edulis* and *Juniperus* spp. at lower elevations. There may be scattered shrubs present, such as species of *Holodiscus, Ribes, Physocarpus, Rosa, Juniperus*, and *Jamesia americana, Mahonia repens, Rhus trilobata,* or *Amelanchier alnifolia*. Soil development is limited, as is herbaceous cover (NatureServe 2012).

Western Great Plains Cliff and Outcrop

This system includes cliffs and outcrops throughout the Western Great Plains Division. Substrate can range from sandstone and limestone, which can often form bands in the examples of this system. Vegetation is restricted to shelves, cracks and crevices in the rock. However, this system differs from Western Great Plains Badlands in that often the soil is slightly developed and less erodible, and some grass and shrub species can occur at greater than 10 percent. Common species in this system include short shrubs such as *Rhus trilobata* and *Artemisia longifolia* and mixed grass species such as *Bouteloua curtipendula* and *Bouteloua gracilis* and *Calamovilfa longifolia*. Drought and wind erosion are the most common natural dynamics affecting this system (NatureServe 2012).

J.1.5 Big Sagebrush

Inter-Mountain Basins Big Sagebrush Shrubland

This ecological system occurs throughout much of the western United States, typically in broad basins between mountain ranges, plains, and foothills between 4,900 and 7,500 feet (1,500 and 2,300 meters) elevation. Soils are typically deep, well-drained, and non-saline. These shrublands are dominated by *Artemisia tridentata ssp. tridentata* (not as common in Wyoming or Montana but possibly on stabilized parts of Killpecker Dunes in Wyoming) and/or *Artemisia tridentata* ssp. *wyomingensis* (predominant in Wyoming and Montana). Scattered *Juniperus* spp., *Sarcobatus vermiculatus*, and *Atriplex* spp. may be present in some stands. *Ericameria nauseosa, Chrysothamnus viscidiflorus, Purshia tridentata* (not commonly in Montana or Wyoming), or *Symphoricarpos oreophilus* may codominate disturbed stands (e.g., in burned stands, these may become more predominant). Perennial herbaceous components typically contribute less than 25 percent vegetative cover. Common graminoid species can include *Achnatherum* *hymenoides, Bouteloua gracilis, Elymus lanceolatus, Festuca idahoensis* (not in Montana or Wyoming), *Hesperostipa comata, Leymus cinereus, Pleuraphis jamesii* (not present in northeastern portions of the range), *Pascopyrum smithii, Poa secunda*, or *Pseudoroegneria spicata* (not in Wyoming). Some semi-natural communities are included that often originate on abandoned agricultural land or on other disturbed sites. In these locations, *Bromus tectorum* or other annual bromes and invasive weeds can be abundant. Most *Artemisia tridentata* ssp. *wyomingensis* communities in Wyoming are placed in Inter-Mountain Basins Big Sagebrush Steppe; the shrubland system is more restricted in environmental setting than the steppe. Dunes in the Red Desert have areas of large basin big sage with very dense canopies. In Wyoming, this system is likely to only contain *Artemisia tridentata* ssp. *tridentata* (NatureServe 2012).

Inter-Mountain Basins Big Sagebrush Steppe

This widespread matrix-forming ecological system occurs throughout much of the Columbia Plateau and northern Great Basin, east into the Wyoming Basins, central Montana, and north and east onto the western fringe of the Great Plains in Montana and South Dakota. It is found at slightly higher elevations farther south. In central Montana, this system differs slightly with more summer rain than winter precipitation, more precipitation annually, and occurs on glaciated landscapes. Soils are typically deep and non-saline, often with a microphytic crust. This shrub-steppe is dominated by perennial grasses and forbs (greater than 25 percent cover) with *Artemisia tridentata* ssp. *tridentata* (this is not at all important in Wyoming occurrences), *Artemisia tridentata* ssp. *xericensis, Artemisia tridentata* ssp. *wyomingensis, Artemisia tripartita* ssp. *tripartita* (Snake River valley in Wyoming), *Artemisia cana* ssp. *cana*, and/or *Purshia tridentata* dominating or codominating the open to moderately dense (10 to 40 percent cover) shrub layer. *Atriplex confertifolia, Chrysothamnus viscidiflorus, Ericameria nauseosa, Sarcobatus vermiculatus, Tetradymia* spp., or *Artemisia frigida* may be common especially in disturbed stands.

In Montana and Wyoming, stands are more mesic, with more biomass of grass, have less shrub diversity than stands farther west, and 50 to 90 percent of the occurrences are dominated by *Artemisia tridentata* ssp. *wyomingensis* with *Pascopyrum smithii*. In addition, *Bromus japonicus* and *Bromus tectorum* are indicators of disturbance, and *Bromus tectorum* is typically not as abundant as in the Intermountain West, possibly due to a colder climate. Associated graminoids can include *Achnatherum hymenoides, Calamagrostis montanensis, Elymus lanceolatus* ssp. *lanceolatus, Koeleria macrantha, Poa secunda, Pascopyrum smithii, Hesperostipa comata, Nassella viridula, Bouteloua gracilis*, and *Pseudoroegneria spicata*. Important rhizomatous species include *Carex filifolia* and *Carex duriuscula*, which are very common and important in the eastern distribution of this system in both Wyoming and Montana. *Festuca idahoensis* is uncommon in this system, although it does occur in areas of higher elevations/precipitation; *Festuca campestris* is also uncommon.

In Wyoming, both *Nassella viridula* and *Pseudoroegneria spicata* rarely occur, with the latter typically found in eastern Wyoming on ridgetops and rocky slopes outside of this system. In Montana, there is an absence of *Festuca* spp., except *Vulpia octoflora*. Common forbs are *Phlox hoodii, Arenaria* spp., *Opuntia* spp., *Sphaeralcea coccinea, Dalea purpurea, Liatris punctata*, and *Astragalus* spp. Areas with deeper soils more commonly support *Artemisia tridentata* ssp. *tridentata* but have largely been converted for other land uses. The natural fire regime of this ecological system likely maintains a patchy distribution of shrubs, so the general aspect of the vegetation is grassland. Shrubs may increase following heavy grazing and/or with fire suppression, particularly in moist portions of the northern Columbia Plateau where it forms a landscape mosaic pattern with shallow-soil scabland shrublands. Where fire frequency has allowed for shifts to a native grassland condition, maintained without significant shrub invasion over a 50- to 70-year interval, the area would be considered Columbia Basin Foothill and Canyon Dry Grassland (NatureServe 2012).

Inter-Mountain Basins Montane Sagebrush Steppe

This ecological system includes sagebrush communities occurring at foothills (in Wyoming) to montane and subalpine elevations across the western United States from 3,300 feet (1,000 meters) in eastern Oregon and Washington to more than 9,800 feet (3,000 meters) in the southern Rockies. In Montana, it occurs on mountain islands in the north-central portion of the state and possibly along the Boulder River south of Absarokee and at higher elevations. In British Columbia, it occurs between 1,450 and 5,400 feet (450 and 1,650 meters) in the southern Fraser Plateau and the Thompson and Okanagan basins. Climate is cool, semi-arid to subhumid. This system primarily occurs on deep-soiled to stony flats, ridges, nearly flat ridgetops, and mountain slopes. In general, this system shows an affinity for mild topography, fine soils, some source of subsurface moisture or more mesic sites, zones of higher precipitation, and areas of snow accumulation. Across its range of distribution, this is a compositionally diverse system. It is composed primarily of *Artemisia tridentata* ssp. *vaseyana*, *Artemisia cana* ssp. *viscidula*, and related taxa such as *Artemisia tridentata* ssp. *spiciformis (= Artemisia spiciformis)*. *Purshia tridentata* may codominate or even dominate some stands. *Artemisia arbuscula* ssp. *arbuscula*-dominated shrublands commonly occur in this system on rocky or windblown sites. Other common shrubs include *Symphoricarpos* spp., *Amelanchier* spp., *Ericameria nauseosa, Peraphyllum ramosissimum, Ribes cereum*, and *Chrysothamnus viscidiflorus*. *Artemisia tridentata* ssp. *wyomingensis* may be present to codominant if the stand is clearly montane as indicated by montane indicator species such as *Festuca idahoensis, Leucopoa kingii*, or *Danthonia intermedia*. Most stands have an abundant perennial herbaceous layer (more than 25 percent cover, in many cases more than 50 percent cover), but this system also includes *Artemisia tridentata* ssp. *vaseyana* shrublands. Common graminoids include *Danthonia intermedia, Festuca arizonica, Festuca idahoensis, Hesperostipa comata, Poa fendleriana, Elymus trachycaulus, Bromus carinatus, Poa secunda, Leucopoa kingii, Deschampsia caespitosa, Calamagrostis rubescens*, and *Pseudoroegneria spicata*. Species of *Achnatherum* are common, including *Achnatherum nelsonii* ssp. *dorei*, *Achnatherum nelsonii* ssp. *nelsonii, Achnatherum hymenoides*, and others. In many areas, wildfires can maintain an open herbaceous-rich steppe condition; although at most sites, shrub cover can be unusually high for a steppe system (greater than 40 percent), with the moisture providing equally high grass and forb cover (NatureServe 2012).

J.1.6 Developed/Disturbed

Developed, High Intensity

This land cover category includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses, and commercial/industrial development. Impervious surfaces account for 80 to 100 percent of the total cover (University of Idaho 2012).

Developed, Low Intensity

This land cover category includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20 to 49 percent of total cover. These areas most commonly include single-family housing units (University of Idaho 2012).

Developed, Medium Intensity

This land cover category includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50 to 79 percent of the total cover. These areas most commonly include single-family housing units (University of Idaho 2012).

Developed, Open Space

This land cover category includes areas with a mixture of some constructed materials but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes (University of Idaho 2012).

Disturbed, Non-specific

This land cover category includes areas that are barren or have relatively low vegetation cover that is associated with some form of generic human alteration or management regime. These areas typically are associated with heavy amounts of grazing (University of Idaho 2012).

Disturbed/Successional – Recently Chained Pinyon-Juniper

This land cover category includes areas that have recently been chained to remove pinyon-juniper and are clearly evident in the imagery (images acquired between 1999 and 2001) (University of Idaho 2012).

Quarries, Mines, Gravel Pits, and Oil Wells

This land cover category includes areas of extractive mining activities with significant surface expression (University of Idaho 2012).

Recently Burned

This land cover category includes areas that have burned in the recent past and are clearly evident in the imagery (images acquired between 1999 and 2001) (University of Idaho 2012).

Recently Logged Areas

This land cover category includes areas that have recently been clear-cut or thinned by 50 percent or more and are clearly evident in the imagery (images acquired between 1999 and 2001) (University of Idaho 2012).

J.1.7 Grassland

Inter-Mountain Basins Semi-Desert Grassland

This widespread ecological system includes the driest grasslands throughout the Intermountain western United States. It occurs on xeric sites over an elevation range of approximately 4,750 to 7,610 feet (1,450 to 2,320 meters) on a variety of landforms, including swales, playas, mesas, alluvial flats, and plains. This system may constitute the matrix over large areas of Intermountain basins, and also may occur as large patches in mosaics with shrubland systems dominated by *Artemisia tridentata* ssp. *tridentata, Artemisia tridentata* ssp. *wyomingensis, Atriplex* spp., *Coleogyne* spp., *Ephedra* spp., *Gutierrezia sarothrae*, or *Krascheninnikovia lanata*. Grasslands in areas of higher precipitation, at higher elevation, typically belong to other systems. Substrates often are well-drained sandy or loam soils derived from sedimentary parent materials but are quite variable and may include fine-textured soils derived from igneous and metamorphic rocks. The dominant perennial bunch grasses and shrubs in this system are all drought-resistant plants. Dominant or codominant species are *Achnatherum hymenoides, Aristida* spp., *Bouteloua gracilis, Hesperostipa comata, Muhlenbergia* spp., or *Pleuraphis jamesii*. Scattered shrubs and dwarf-shrubs often are present, especially *Artemisia tridentata* ssp. *tridentata, Artemisia tridentata* ssp. *wyomingensis, Atriplex* spp., *Coleogyne* spp., *Ephedra* spp., *Gutierrezia sarothrae,* and

Krascheninnikovia lanata. Grasslands in the basins of south-central and southwestern Wyoming, dominated by *Pseudoroegneria spicata* and *Poa secunda* and containing cushion-form forbs and other species typical of dry basins, are included in this system (NatureServe 2012).

Northern Rocky Mountain Lower Montane, Foothill, and Valley Grassland

This ecological system of the northern Rocky Mountains is found at lower montane to foothill elevations in the mountains and large valleys of northeastern Wyoming and western Montana, west through Idaho into the Blue Mountains of Oregon, and north into the Okanagan and Fraser plateaus of British Columbia and the Canadian Rockies. They also occur to the east in the central Montana mountain islands and foothills, as well as the Rocky Mountain Front and Big and Little Belt ranges. These grasslands are floristically similar to Inter-Mountain Basins Big Sagebrush Steppe, Columbia Basin Foothill and Canyon Dry Grassland , and Columbia Basin Palouse Prairie , but are defined by shorter summers, colder winters, and young soils derived from recent glacial and alluvial material. These northern lower montane and valley grasslands represent a shift in the precipitation regime from summer monsoons and cold snowy winters found in the southern Rockies to predominantly dry summers and winter precipitation. In the eastern portion of its range in Montana, winter precipitation is replaced by a huge spring peak in precipitation. They are found at elevations from 980 to 5,400 feet (300 to 1,650 meters), ranging from small meadows to large open parks surrounded by conifers in the lower montane, to extensive foothill and valley grasslands below the lower treeline. Many of these valleys may have been primarily sage-steppe with patches of grassland in the past, but because of land-use history post-settlement (herbicide, grazing, fire suppression, pasturing, etc.), they have been converted to grassland-dominated areas. Soils are relatively deep, fine-textured, often with coarse fragments, and non-saline, often with a microphytic crust.

The most important species are cool-season perennial bunch grasses and forbs (greater than 25 percent cover), sometimes with a sparse (less than 10 percent cover) shrub layer. *Pseudoroegneria spicata, Festuca campestris, Festuca idahoensis*, or *Hesperostipa comata* commonly dominate sites on all aspects of level to moderate slopes and on certain steep slopes with a variety of other grasses, such as *Achnatherum hymenoides, Achnatherum richardsonii, Hesperostipa curtiseta, Koeleria macrantha, Leymus cinereus, Elymus trachycaulus, Bromus inermis* ssp. *pumpellianus (= Bromus pumpellianus), Achnatherum occidentale (= Stipa occidentalis), Pascopyrum smithii*, and other graminoids such as *Carex filifolia* and *Danthonia intermedia*. Other grassland species include *Opuntia fragilis, Artemisia frigida, Carex petasata, Antennaria* spp., and *Selaginella densa*. Important exotic grasses include *Phleum pratense, Bromus inermis*, and *Poa pratensis*. Shrub species may be scattered, including *Amelanchier alnifolia, Rosa* spp., *Symphoricarpos* spp., *Juniperus communis, Artemisia tridentata*, and in Wyoming *Artemisia tripartita* ssp. *rupicola*. Common associated forbs include *Geum triflorum, Galium boreale, Campanula rotundifolia, Antennaria microphylla, Geranium viscosissimum*, and *Potentilla gracilis*. A soil crust of lichen covers almost all open soil between clumps of grasses; *Cladonia* and *Peltigera* are the most common lichens. Unvegetated mineral soil is commonly found between clumps of grass and the lichen cover.

The fire regime of this ecological system maintains a grassland due to rapid fire return that retards shrub invasion or landscape isolation and fragmentation that limits seed dispersal of native shrub species. Fire frequency is presumed to be less than 20 years. These are extensive grasslands, not grass-dominated patches in the sagebrush shrub steppe ecological system. *Festuca campestris* is easily eliminated by grazing and does not occur in all areas of this system (NatureServe 2012).

Northwestern Great Plains Mixed Grass Prairie

This system extends from northern Nebraska into southern Canada and westward through the Dakotas to the Rocky Mountain Front in Montana and probably Wyoming, on both glaciated and non-glaciated substrates. Soil texture (which ultimately effects water available to plants) is the defining environmental descriptor; soils are primarily fine and medium-textured and do not include sands, sandy soils, or sandy loams. This system occurs on a wide variety of landforms (e.g., mesatops, stream terraces) and in proximity to a diversity of other systems. It is found most commonly in association with Western Great Plains Sand Prairie that occupies the coarser-textured substrates. In various locales the topography where this system occurs is broken by many glacial pothole lakes, and this system may be proximate to the Great Plains Prairie Pothole. On the eastern Montana plains, mixed grass prairie is by far the predominant system. Here it occurs continuously for hundreds of square kilometers, interrupted only by riparian areas or sand prairies, which are associated with gentle rises, eroded ridges or mesas derived from sandstone. Historically, this system covered approximately 38 million hectare in Nebraska, North and South Dakota, and Canada; now it covers approximately 270,000 square kilometers in this region. The growing season and rainfall are intermediate to drier units to the southwest and mesic tallgrass regions to the east.

Graminoids typically comprise the greatest amount of canopy cover, including *Pascopyrum smithii*, *Nassella viridula*, and *Festuca* spp. In Montana these include *Festuca campestris* and *Festuca idahoensis*. Other commonly dominant species in Montana are *Bouteloua gracilis*, *Hesperostipa comata*, and *Carex filifolia*, while *Festuca campestris* and *Festuca idahoensis* may be more abundant in the north and foothill/montane grassland transition areas. Remnants of *Hesperostipa curtiseta*-dominated vegetation are found in northernmost Montana and North Dakota associated with the most productive sites (largely plowed to cereal grains); the species, usually in association with *Pascopyrum smithii*, is much more abundant in Canada. Sites with a strong component of *Nassella viridula* indicate a more favorable moisture balance and perhaps a favorable grazing regime as well because this is one of the most palatable of the mid-grasses. *Hesperostipa comata* is also an important component and becomes increasingly so as improper grazing regimes usually favor it at the expense of *Pascopyrum smithii*; progressively more destructive grazing can result in the loss of *Pascopyrum smithii* from the system followed by drastic reduction in *Hesperostipa comata* and ultimately the dominance of *Bouteloua gracilis* (or *Poa secunda* and other short graminoids) and/or a lawn of *Selaginella densa*. *Koeleria macrantha*, at least in Montana and southern Canada, is the most pervasive grass; if it has high cover, past intensive grazing is the presumed reason. Shrub species such as *Symphoricarpos* spp. and *Artemisia frigida* and *Artemisia cana* also occur.

Fire and grazing constitute the primary dynamics affecting this system. Drought also can affect this system, in general favoring the shortgrass component at the expense of the mid-grasses. With intensive grazing, cool-season exotics such as *Poa pratensis*, *Bromus inermis*, and *Bromus japonicus* can increase in dominance; both of the rhizomatous grasses have been shown to markedly depress species diversity. Shrub species such as *Juniperus virginiana* also can increase in dominance with fire suppression. This system is one of the most disturbed grassland systems in Nebraska, North and South Dakota, and Canada (NatureServe 2012).

Rocky Mountain Subalpine-Montane Mesic Meadow

This Rocky Mountain ecological system is restricted to sites from lower montane to subalpine where finely textured soils, snow deposition, or windswept dry conditions limit tree establishment. Many occurrences are small patches in spatial character and often are found in mosaics with woodlands, more dense shrublands, or just below alpine communities. It is typically found above 6,500 feet (2,000 meters) in the southern part of its range and above 1,950 feet (600 meters) in the northern part. These upland communities occur on gentle to moderate-gradient slopes and relatively moist habitats. The soils are typically seasonally moist to saturated in the spring, but if so will dry out later in the growing season. These sites are not as wet as those found in Rocky Mountain Alpine-Montane Wet Meadow. Vegetation is typically forb-rich with forbs often contributing more to overall herbaceous cover than graminoids. Some stands are comprised of dense grasslands, these often being taxa with relatively broad and soft blades, but where the moist habitat promotes a rich forb component. Important taxa include *Erigeron* spp., Asteraceae spp., *Mertensia* spp., *Penstemon* spp., *Campanula* spp., *Lupinus* spp., *Solidago* spp., *Ligusticum* spp., *Thalictrum occidentale, Valeriana sitchensis, Rudbeckia occidentalis, Balsamorhiza sagittata*, and *Wyethia* spp. Important grasses include *Deschampsia caespitosa, Koeleria macrantha*, perennial *Bromus* spp., and a number of *Carex* species. *Dasiphora fruticosa* ssp. *floribunda* and *Symphoricarpos* spp. are occasional but not abundant. Burrowing mammals can increase the forb diversity (NatureServe 2012).

Southern Rocky Mountain Montane-Subalpine Grassland

This Rocky Mountain ecological system typically occurs between 7,200 and 9,850 feet (2,200 and 3,000 meters) on flat to rolling plains and parks or on lower sideslopes that are dry, but it may extend up to 11,000 feet (3,350 meters) on warm aspects. Soils resemble prairie soils in that the A-horizon is dark brown, relatively high in organic matter, slightly acidic, and usually well drained. An occurrence usually consists of a mosaic of two or three plant associations with one of the following dominant bunch grasses: *Danthonia intermedia, Danthonia parryi, Festuca idahoensis, Festuca arizonica, Festuca thurberi, Muhlenbergia filiculmis*, or *Pseudoroegneria spicata*. The subdominants include *Muhlenbergia montana, Bouteloua gracilis,* and *Poa secunda*. These large-patch grasslands are intermixed with matrix stands of spruce-fir, lodgepole pine, ponderosa pine, and aspen forests. In limited circumstances (e.g., South Park in Colorado), they form the matrix of high-elevation plateaus. Small-patch representations of this system do occur at high elevations of the Trans-Pecos where they present as occurrences of *Festuca arizonica-Blepharoneuron tricholepis* herbaceous vegetation. These occurrences often occupy sites adjacent to Madrean Oriental Chaparral (NatureServe 2012).

Western Great Plains Sand Prairie

The sand prairies constitute a very unique system in the western Great Plains. These sand prairies often are considered part of the tallgrass or mixed grass regions in the western Great Plains but can contain elements from Western Great Plains Shortgrass Prairie, Central Mixed Grass Prairie, and Northwestern Great Plains Mixed Grass Prairie. The largest expanse of sand prairies (approximately 5 million hectares) can be found in the Sandhills of north-central Nebraska and southwestern South Dakota. These areas are relatively intact. The primary use of this system has been grazing (not cultivation), and areas such as the Nebraska Sandhills can experience less degeneration than other prairie systems. Although greater than 90 percent of the Sandhills region is privately owned, the known fragility of the soils and the cautions used by ranchers to avoid poor grazing practices have allowed for fewer significant changes in the vegetation of the Sandhills compared to other grassland systems. The unifying and controlling feature for this system is that coarse-textured soils predominate and the dominant grasses are well-adapted to this condition.

Soils in the sand prairies can be relatively undeveloped and are highly permeable. Soil texture and drainage along with a species' rooting morphology, photosynthetic physiology, and mechanisms to avoid transpiration loss are highly important in determining the composition of the sand prairies. In the northwestern portion of its range, stand size corresponds to the area of exposed caprock sandstone, and small patches predominate, but large patches also are found embedded in the encompassing Northwestern Great Plains Mixed Grass Prairie.

Another important feature is their susceptibility to wind erosion. Blowouts and sand draws are some of the unique wind-driven disturbances in the sand prairies, particularly the Nebraska Sandhills. In most of eastern Montana, substrates supporting this system have weathered in place from sandstone caprock; thus the solum is relatively thin, and the wind-sculpted features present farther east, particularly in Nebraska, do not develop. Graminoid species dominate the sand prairies, although relative dominance can change due to impacts of wind disturbance. *Andropogon hallii* and *Calamovilfa longifolia* are the most common species, but other grass and forb species such as *Hesperostipa comata*, *Carex inops* ssp. *heliophila*, and *Panicum virgatum* may be present. Apparently only *Calamovilfa longifolia* functions as a dominant throughout the range of the system. In the western extent, *Hesperostipa comata* becomes more dominant, and *Andropogon hallii* is less abundant but still present. Communities of *Artemisia cana* ssp. *cana* are included here in central and eastern Montana. Patches of *Quercus havardii* also can occur in this system in the southern Great Plains. Fire and grazing constitute the other major dynamic processes that can influence this system (NatureServe 2012).

J.1.8 Invasive

Introduced Upland Vegetation – Annual Grassland

This land cover category includes areas dominated by introduced, annual and/or biennial forb species such as *Halogeton glomeratum*, *Kochia scoparia*, and *Salsola* spp. or annual grass species such as *Avena* spp., *Bromus* spp., and *Schismus* spp. (University of Idaho 2012).

Introduced Upland Vegetation – Perennial Grassland and Forbland

This land cover category includes areas that are dominated by introduced perennial forb or grassland species such as: *Cirsium arvense*, *C. vulgare*, *Centaurea* spp., *Euphorbia esula*, *Isatis tinctora*, *Lepidium* ssp., *Melilotus albus*, M. *officinalis*, *Onopordum acanthium*, *Agropyron cristatum*, *Bromus inermis*, *Eragrostis lehmannianna*, *Pennisetum* spp., *Poa bulbosa*, *P. pratensis*, *Thinopyrum intermedium* (University of Idaho 2012).

Introduced Upland Vegetation – Treed

This land cover category includes vegetation dominated (typically greater than 60 percent canopy cover) by introduced species. These areas are spontaneous, self-perpetuating, and are not the immediate result of planting, cultivation, or human maintenance. Land occupied by introduced vegetation is generally permanently altered (converted) unless restoration efforts are undertaken. Specifically, land cover is significantly altered/disturbed by introduced tree species (University of Idaho 2012).

Noxious Weeds

In addition to the GAP land cover categories used to define invasive habitat in the Project area, noxious weed distribution information was obtained from BLM field offices and USFS ranger districts and was used in conjunction with the GAP data to supplement identification of the invasive primary habitat type to determine the presence of noxious weeds in the Project area.

J.1.9 Montane Forest

Middle Rocky Mountain Montane Douglas-fir Forest and Woodland

This ecological system occurs throughout the middle Rocky Mountains of central and southern Idaho (Lemhi, Beaverhead, and Lost River ranges), south and east into the greater Yellowstone region, and south and east into the Wind River, Gros Ventre, and Bighorn ranges of Wyoming. It extends north into Montana on the east side of the Continental Divide, north to about the McDonald Pass area, and also into the Rocky Mountain Front region of Montana. This is a *Pseudotsuga menziesii*-dominated system without the maritime floristic composition; these are forests and woodlands occurring in the central Rockies where the southern monsoon influence is less and maritime climate regime is not important. This system includes extensive *Pseudotsuga menziesii* forests, occasionally with *Pinus flexilis* on calcareous substrates, and *Pinus contorta* at higher elevations. True firs, such as *Abies concolor*, *Abies grandis*, and

Abies lasiocarpa, are absent in these occurrences, but *Picea engelmannii* can occur in some stands. Understory components include shrubs such as *Physocarpus malvaceus, Juniperus communis, Symphoricarpos oreophilus*, and *Mahonia repens* and graminoids such as *Calamagrostis rubescens, Carex rossii*, and *Leucopoa kingii*. The fire regime is of mixed severity with moderate frequency. This system often occurs at the lower treeline immediately above valley grasslands, or sagebrush steppe and shrublands. Sometimes there may be a bath-tub ring of *Pinus ponderosa* at lower elevations or *Pinus flexilis* between the valley nonforested and the solid *Pseudotsuga menziesii* forest. In the Wyoming Basins, this system occurs as isolated stands of *Pseudotsuga menziesii*, with *Artemisia tridentata, Pseudoroegneria spicata, Leucopoa kingii*, and *Carex rossii* (NatureServe 2012).

Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest

This ecological system is composed of highly variable montane coniferous forests found in the interior Pacific Northwest, from southernmost interior British Columbia, eastern Washington, eastern Oregon, northern Idaho, western and north-central Montana, and south along the east slope of the Cascades in Washington and Oregon. In central Montana, it occurs on mountain islands (the Snowy Mountains). This system is associated with a submesic climate regime with annual precipitation ranging from 20 to 40 inches (50 to 100 centimeters), with a maximum in winter or late spring. Winter snowpacks typically melt off in early spring at lower elevations. Elevations range from 1,500 to 6,300 feet (460 to 1,920 meters). Most occurrences of this system are dominated by a mix of *Pseudotsuga menziesii* and *Pinus ponderosa* (but there can be one without the other) and other typically seral species, including *Pinus contorta, Pinus monticola* (not in central Montana), and *Larix occidentalis* (not in central Montana). *Picea engelmannii* (or *Picea glauca* or their hybrid) becomes increasingly common towards the eastern edge of the range. The nature of this forest system is a matrix of large patches dominated or codominated by one or combinations of the above species; *Abies grandis* (a fire-sensitive, shade-tolerant species not occurring in central Montana) has increased on many sites once dominated by *Pseudotsuga menziesii* and *Pinus ponderosa*, which were formerly maintained by low-severity wildfire.

Presettlement fire regimes may have been characterized by frequent, low-intensity ground fires that maintained relatively open stands of a mix of fire-resistant species. Under present conditions the fire regime is mixed severity and more variable, with stand-replacing fires more common, and the forests are more homogeneous. With vigorous fire suppression, longer fire-return intervals are now the rule, and multi-layered stands of *Pseudotsuga menziesii, Pinus ponderosa*, and/or *Abies grandis* provide fuel ladders, making these forests more susceptible to high-intensity, stand-replacing fires. They are very productive forests that have been priorities for timber production. They rarely form either upper or lower timberline forests. Understories are dominated by graminoids, such as *Pseudoroegneria spicata, Calamagrostis rubescens, Carex geyeri*, and *Carex rossii* that may be associated with a variety of shrubs, such as *Acer glabrum, Juniperus communis, Physocarpus malvaceus, Symphoricarpos albus, Spiraea betulifolia*, or *Vaccinium membranaceum* on mesic sites. *Abies concolor* and *Abies grandis* x *concolor* hybrids in central Idaho (the Salmon Mountains) are included here but have very restricted range in this area. *Abies concolor* and *Abies grandis* in the Blue Mountains of Oregon are probably hybrids of the two and mostly *Abies grandis* (NatureServe 2012).

Northern Rocky Mountain Mesic Montane Mixed Conifer Forest

This ecological system occurs in the northern Rockies of western Montana west into northeastern Washington and southern British Columbia. These are vegetation types dominated by *Tsuga heterophylla* and *Thuja plicata* in most cases, found in areas influenced by incursions of mild, wet, Pacific maritime air masses. Much of the annual precipitation occurs as rain; but where snow does occur, it can generally be melted by rain during warm winter storms. Occurrences generally are found on all slopes and aspects but grow best on sites with high soil moisture, such as toeslopes and bottomlands. At the periphery of its distribution, this system is confined to moist canyons and cooler, moister aspects. Generally these are moist, non-flooded or upland sites that are not saturated yearlong. Along with *Tsuga heterophylla* and *Thuja plicata, Pseudotsuga menziesii* commonly shares the canopy, and *Pinus monticola, Pinus contorta, Abies grandis, Taxus brevifolia*, and *Larix occidentalis* are major associates. Mesic *Abies grandis* associations are included in this system, and *Abies grandis* is often the dominant species in these situations; *Tsuga heterophylla* and *Thuja plicata* can both be absent. *Cornus nuttallii* may be present in some situations. *Picea engelmannii, Abies lasiocarpa*, and *Pinus ponderosa* may be present but only on the coldest or warmest and driest sites. *Linnaea borealis, Paxistima myrsinites, Alnus incana, Acer glabrum, Spiraea betulifolia, Symphoricarpos hesperius (= Symphoricarpos mollis* ssp*. hesperius), Cornus canadensis, Rubus parviflorus, Menziesia ferruginea*, and *Vaccinium membranaceum* are common shrub species. The composition of the herbaceous layer reflects local climate and degree of canopy closure; it is typically highly diverse in all but closed-canopy conditions. Important forbs and ferns include *Actaea rubra, Anemone piperi, Aralia nudicaulis, Asarum caudatum, Clintonia uniflora, Coptis occidentalis, Thalictrum occidentale, Tiarella trifoliata, Trientalis borealis, Trillium ovatum, Viola glabella, Gymnocarpium dryopteris, Polystichum munitum*, and *Adiantum pedatum*. Typically, stand-replacement, fire-return intervals are from 150 to 500 years, with moderate-severity fire intervals from 50 to 100 years (NatureServe 2012).

Rocky Mountain Lodgepole Pine Forest

This ecological system is widespread in upper montane to subalpine elevations of the Rocky Mountains, Intermountain West region, north into the Canadian Rockies, and east into the mountain islands of north-central Montana. These are subalpine forests where the dominance of *Pinus contorta* is related to fire history and topo-edaphic conditions. Following stand-replacing fires, *Pinus contorta* will rapidly colonize and develop into dense, even-aged stands. Most forests in this ecological system occur as early- to mid-successional forests that developed following fires. This system includes *Pinus contorta*-dominated stands that, while typically persistent for greater than 100-year time frames, may succeed to spruce-fir; in the southern and central Rocky Mountains, it is seral to Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland. More northern occurrences are seral to Rocky Mountain Subalpine Mesic-Wet Spruce-Fir Forest and Woodland. Soils supporting these forests are typically well-drained, gravelly, coarse-textured, acidic, and rarely formed from calcareous parent materials.

These forests are dominated by *Pinus contorta* with shrub, grass, or barren understories. Sometimes there are intermingled mixed conifer/*Populus tremuloides* stands, with the latter occurring with inclusions of deeper, typically fine-textured soils. The shrub stratum may be conspicuous to absent; common species include *Arctostaphylos uva-ursi, Ceanothus velutinus, Linnaea borealis, Mahonia repens, Menziesia ferruginea* (in northern occurrences), *Purshia tridentata, Rhododendron albiflorum* (in northern occurrences), *Spiraea betulifolia, Spiraea douglasii, Shepherdia canadensis, Vaccinium caespitosum, Vaccinium scoparium, Vaccinium membranaceum, Symphoricarpos albus*, and *Ribes* spp. In southern interior British Columbia, this system is usually an open lodgepole pine forest found extensively between 1,640 and 5,250 feet (500 and 1,600 meters) elevation in the Columbia Range. In the Interior Cedar Hemlock and Interior Douglas-fir zones, *Tsuga heterophylla* or *Pseudotsuga menziesii* may be present. In Alberta, species composition indicates the transition to more boreal floristics, including such species as *Empetrum nigrum, Ledum groenlandicum, Leymus innovatus*, and more abundant lichens or mosses such as *Cladina* spp., *Hylocomium splendens*, and *Pleurozium schreberi* (NatureServe 2012).

Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland

Engelmann spruce and subalpine fir forests comprise a substantial part of the subalpine forests of the Cascades and Rocky Mountains from southern British Columbia east into Alberta and south into New Mexico and the Intermountain region. They also occur on mountain islands of north-central Montana.

They are the matrix forests of the subalpine zone, with elevations ranging from 4,100 feet (1,275 meters) in its northern distribution to 11,000 feet (3,355 meters) in the south. They often represent the highest elevation forests in an area. Sites in this system are cold year-round, and precipitation is predominantly in the form of snow, which may persist until late summer. Snowpacks are deep and late-lying, and summers are cool. Frost is possible almost all summer and may be common in restricted topographic basins and benches. Despite their wide distribution, the tree canopy characteristics are remarkably similar with *Picea engelmannii* and *Abies lasiocarpa* dominating, either mixed or alone. *Pseudotsuga menziesii* may persist in occurrences of this system for long periods without regeneration. *Pinus contorta* is common in many occurrences, and patches of pure *Pinus contorta* are not uncommon, as well as mixed conifer/*Populus tremuloides* stands. In some areas, such as Wyoming, *Picea engelmannii*-dominated forests are on limestone or dolomite, while nearby codominated spruce-fir forests are on granitic or volcanic rocks. Upper elevation examples may have more woodland physiognomy, and *Pinus albicaulis* can be a seral component. What have been called ribbon forests or tree islands by some authors are included here; they can be found at the upper treeline in many areas of the Rockies, including the central and northern ranges in Colorado and the Medicine Bow and Bighorn ranges of Wyoming. These are more typically islands or ribbons of trees, sometimes with a krummholz form, with open-meadow areas in a mosaic. These patterns are controlled by snow deposition and wind-blown ice. Xeric species may include *Juniperus communis, Linnaea borealis, Mahonia repens*, or *Vaccinium scoparium*. In the Bighorn Mountains, *Artemisia tridentata* is a common shrub. More northern occurrences often have taller, more mesic shrub and herbaceous species, such as *Empetrum nigrum, Rhododendron albiflorum*, and *Vaccinium membranaceum*. Disturbance includes occasional blowdown, insect outbreaks, and stand-replacing fire. The mean return interval for stand-replacing fire is 222 years as estimated in southeastern British Columbia (NatureServe 2012).

Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland

Engelmann spruce and subalpine fir forests comprise a substantial part of the subalpine forests of the Cascades and Rocky Mountains from southern British Columbia east into Alberta and south into New Mexico and the Intermountain region. They are the matrix forests of the subalpine zone, with elevations ranging from 4,100 feet (1,275 meters) in its northern distribution to 11,000 feet (3,355 meters) in the south. They often represent the highest elevation forests in an area. Sites in this system are cold year-round, and precipitation is predominantly in the form of snow, which may persist until late summer. Snowpacks are deep and late-lying, and summers are cool. Frost is possible almost all summer and may be common in restricted topographic basins and benches. Despite their wide distribution, the tree canopy characteristics are remarkably similar with *Picea engelmannii* and *Abies lasiocarpa* dominating, either mixed or alone. *Pseudotsuga menziesii* may persist in occurrences of this system for long periods without regeneration. *Pinus contorta* is common in many occurrences, and patches of pure *Pinus contorta* are not uncommon, as well as mixed conifer/*Populus tremuloides* stands. In some areas, such as Wyoming, *Picea engelmannii*-dominated forests are on limestone or dolomite, while nearby codominated spruce-fir forests are on granitic or volcanic rocks. Xeric species may include *Juniperus communis, Linnaea borealis, Mahonia repens*, or *Vaccinium scoparium*. More northern occurrences often have taller, more mesic shrub and herbaceous species, such as *Empetrum nigrum, Rhododendron albiflorum*, and *Vaccinium membranaceum*. Disturbance includes occasional blow-down, insect outbreaks, and stand-replacing fire (University of Idaho 2012).

Rocky Mountain Subalpine-Montane Limber-Bristlecone Pine Woodland

This ecological system occurs throughout the Rocky Mountains, south of Montana, on dry, rocky ridges and slopes near upper treeline above the matrix spruce-fir forest. It extends down to the lower montane in the northeastern Great Basin Mountains where it is dominated by *Pinus flexilis*. Sites are harsh, exposed to desiccating winds, with rocky substrates and a short growing season that limit plant growth. Higher-elevation occurrences are found well into the subalpine-alpine transition on wind-blasted, mostly west-facing slopes and exposed ridges. Calcareous substrates are important for *Pinus flexilis*-dominated communities in the northern Rocky Mountains and possibly elsewhere. The open tree canopy is often patchy and is strongly dominated by *Pinus flexilis* or *Pinus aristata* with the latter restricted to southern Colorado, northern New Mexico and the San Francisco Mountains in Arizona. In the Wyoming Rockies and northern Great Basin, *Pinus albicaulis* is found in some occurrences, but is a minor component. Other trees such as *Juniperus* spp., *Pinus contorta, Pinus ponderosa*, or *Pseudotsuga menziesii* are occasionally present. *Arctostaphylos uva-ursi, Cercocarpus ledifolius, Juniperus communis, Mahonia repens, Purshia tridentata, Ribes montigenum*, or *Vaccinium* spp. may form an open shrub layer in some stands. The herbaceous layer, if present, is generally sparse and composed of xeric graminoids, such as *Calamagrostis purpurascens, Festuca arizonica, Festuca idahoensis, Festuca thurberi*, or *Pseudoroegneria spicata*, or more alpine plants (NatureServe 2012).

Southern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Woodland

This is a highly variable ecological system of the montane zone of the Rocky Mountains. It occurs throughout the southern Rockies and north and west into Utah, Nevada, Wyoming, and Idaho. These are mixed-conifer forests occurring on all aspects at elevations ranging from 3,900 to 10,825 feet (1,200 to 3,300 meters). Rainfall averages less than 29.5 inches (75 centimeters) per year (16 to 24 inches [40 to 60 centimeters), with summer monsoons during the growing season contributing substantial moisture. The composition and structure of the overstory are dependent on the temperature and moisture relationships of the site and the successional status of the occurrence. *Pseudotsuga menziesii* and *Abies concolor* are most frequent, but *Pinus ponderosa* may be present to codominant. *Pinus flexilis* is common in Nevada. *Pseudotsuga menziesii* forests occupy drier sites, and *Pinus ponderosa* is a common codominant. *Abies concolor*-dominated forests occupy cooler sites, such as upper slopes at higher elevations, canyon sideslopes, ridgetops, and north- and east-facing slopes that burn somewhat infrequently. *Picea pungens* is most often found in cool, moist locations, often occurring as smaller patches in a matrix of other associations. As many as seven conifers can be found growing in the same occurrence, and there is a number of cold-deciduous shrub and graminoid species common, including *Arctostaphylos uva-ursi, Mahonia repens, Paxistima myrsinites, Symphoricarpos oreophilus, Jamesia americana, Quercus gambelii*, and *Festuca arizonica*. This system was undoubtedly characterized by a mixed-severity fire regime in its natural condition, characterized by a high degree of variability in lethality and return interval (NatureServe 2012).

Southern Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland

These are mixed conifer forests of the Rocky Mountains west into the ranges of the Great Basin, occurring predominantly in cool ravines and on north-facing slopes. Elevations range from 3,900 to 10,825 feet (1,200 to 3,300 meters). Occurrences of this system are found on cooler and more mesic sites than Southern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Woodland. Such sites include lower and middle slopes of ravines, along stream terraces, moist, concave topographic positions, and north- and east-facing slopes that burn somewhat infrequently. *Pseudotsuga menziesii* and *Abies concolor* are most common canopy dominants, but *Picea engelmannii, Picea pungens*, or *Pinus ponderosa* may be present. This system includes mixed conifer (*Populus tremuloides)* stands. A number of cold-deciduous shrub species can occur, including *Acer glabrum, Acer grandidentatum, Alnus incana, Betula occidentalis, Cornus sericea, Jamesia americana, Physocarpus malvaceus, Robinia neomexicana, Vaccinium membranaceum*, and *Vaccinium myrtillus*. Herbaceous species include *Bromus ciliatus, Carex geyeri, Carex rossii, Carex siccata, Muhlenbergia virescens, Pseudoroegneria spicata, Erigeron eximius, Fragaria virginiana, Luzula parviflora, Osmorhiza berteroi, Packera cardamine, Thalictrum occidentale,* and *Thalictrum fendleri*. Naturally occurring fires are of variable return intervals and mostly light, erratic, and infrequent due to the cool, moist conditions.

J.1.10 Mountain Shrub

Harvested Forest-Shrub Regeneration

This ecological system includes areas dominated by shrubs; less than 16 feet (5 meters) tall with shrub canopy typically greater than 20 percent of total vegetation. This class includes true shrubs, young trees in early successional stage, or trees stunted from environmental conditions following a tree harvesting event (University of Idaho 2012).

Inter-Mountain Basins Curl-leaf Mountain-Mahogany Woodland and Shrubland

This ecological system occurs in hills and mountain ranges of the Intermountain West basins from the eastern foothills of the Sierra Nevada northeast to the foothills of the Bighorn Mountains. It typically occurs from 1,950 feet (600 meters) to more than 8,600 feet (2,650 meters) on rocky outcrops or escarpments and forms small- to large-patch stands in forested areas. Most stands occur as shrublands on ridges and steep rimrock slopes, but they may be composed of small trees in steppe areas. Scattered junipers or pines also may occur. This system includes both woodlands and shrublands dominated by *Cercocarpus ledifolius*. *Artemisia tridentata* ssp. *vaseyana*, *Purshia tridentata*, with species of *Arctostaphylos, Ribes*, or *Symphoricarpos* often are present. Undergrowth often is very sparse and dominated by bunch grasses, usually *Pseudoroegneria spicata* and *Festuca idahoensis*. *Cercocarpus ledifolius* is a slow-growing, drought-tolerant species that generally does not resprout after burning and needs the protection from fire that rocky sites provide (NatureServe 2012).

Northern Rocky Mountain Montane-Foothill Deciduous Shrubland

This shrubland ecological system is found in the lower montane and foothill regions around the Columbia Basin, and north and east into the northern Rockies, including Alberta and British Columbia. These shrublands typically occur below the treeline, in the matrix of surrounding low-elevation grasslands and sagebrush shrublands. They also occur in the ponderosa pine and Douglas-fir zones, but rarely up into the subalpine zone (on dry sites). The shrublands are usually found on steep slopes of canyons and in areas with some soil development, either loess deposits or volcanic clays; they occur on all aspects. Fire, flooding and erosion all affect these shrublands, but they typically will persist on sites for long periods. These communities develop near talus slopes as garlands, at the heads of dry drainages, and toeslopes in the moist shrub-steppe and steppe zones.

Physocarpus malvaceus, Prunus emarginata, Prunus virginiana, Rosa spp., *Rhus glabra, Acer glabrum, Amelanchier alnifolia, Symphoricarpos albus, Symphoricarpos oreophilus*, and *Holodiscus discolor* are the most common dominant shrubs, occurring alone or any combination. In the Alberta's Upper and Lower Foothills subregions, common shrubs include *Arctostaphylos uva-ursi, Juniperus communis, Symphoricarpos* spp., *Amelanchier alnifolia*, and *Rosa* spp. *Rubus parviflorus* and *Ceanothus velutinus* are other important shrubs in this system, being more common in montane occurrences than in subalpine situations. Occurrences in central and eastern Wyoming can include *Artemisia tridentata* ssp. *vaseyana* and *Cercocarpus montanus*, but neither of these is dominant, and where they occur, the stands are truly mixes of shrubs, often with *Amelanchier alnifolia, Prunus virginiana*, and others being the predominant taxa. In moist areas, *Crataegus douglasii* can be common. *Shepherdia canadensis* and *Spiraea betulifolia* can be abundant in some cases but also occur in Northern Rocky Mountain Subalpine Deciduous Shrubland. *Festuca idahoensis, Festuca campestris, Calamagrostis rubescens, Carex geyeri, Koeleria macrantha, Pseudoroegneria spicata*, and *Poa secunda* are the most important grasses. *Achnatherum thurberianum* and *Leymus cinereus* can be locally important. *Poa pratensis* and *Phleum pratense* are common introduced grasses. *Geum triflorum, Potentilla gracilis, Lomatium triternatum, Balsamorhiza sagittata*, and species of *Eriogonum, Phlox,* and *Erigeron* are important forbs (NatureServe 2012).

Northern Rocky Mountain Subalpine Deciduous Shrubland

This shrubland ecological system is found in the zone of continuous forest in the upper montane and lower subalpine zones of the northern Rocky Mountains. Soils tend to be moist to wet. Stands typically are initiated by fires and will persist on sites for long periods because of repeated burns and changes in the presence of volatile oils in the soil that impedes tree regeneration. *Menziesia ferruginea, Rhamnus alnifolia, Ribes lacustre, Rubus parviflorus, Alnus viridis, Rhododendron albiflorum, Sorbus scopulina, Sorbus sitchensis, Vaccinium myrtillus, Vaccinium scoparium*, and *Vaccinium membranaceum* are the most common dominant shrubs, occurring alone or in any combination. Other shrubs can include *Shepherdia canadensis* and *Ceanothus velutinus*, but these also commonly occur in Northern Rocky Mountain Montane-Foothill Deciduous Shrubland. *Rubus parviflorus* and *Ceanothus velutinus* are occasionally present, being more common in montane shrublands than in this subalpine system. Important forbs include *Xerophyllum tenax, Chamerion angustifolium,* and *Pteridium aquilinum*, reflecting the mesic nature of many of these shrublands (NatureServe 2012).

Rocky Mountain Gambel Oak-Mixed Montane Shrubland

This ecological system occurs in the mountains, plateaus, and foothills of the southern Rocky Mountains and Colorado Plateau, including the Uinta and Wasatch ranges and the Mogollon Rim. These shrublands are most commonly found along dry foothills, lower mountain slopes, and at the edge of the western Great Plains from approximately 6,500 to 9500 feet (2,000 to 2,900 meters), and often are situated above pinyon-juniper woodlands. Substrates are variable and include soil types ranging from calcareous, heavy, fine-grained loams to sandy loams, gravelly loams, clay loams, deep alluvial sand, or coarse gravel. The vegetation is typically dominated by *Quercus gambelii* alone or codominant with *Amelanchier alnifolia, Amelanchier utahensis, Artemisia tridentata, Cercocarpus montanus, Prunus virginiana, Purshia stansburiana, Purshia tridentata, Robinia neomexicana, Symphoricarpos oreophilus*, or *Symphoricarpos rotundifolius*. There may be inclusions of other mesic montane shrublands with *Quercus gambelii* absent or as a relatively minor component. This ecological system intergrades with the lower montane-foothills shrubland system and shares many of the same site characteristics. Density and cover of *Quercus gambelii* and *Amelanchier* spp. often increase after fire (NatureServe 2012).

Rocky Mountain Lower Montane-Foothill Shrubland

This ecological system is found in the foothills, canyon slopes, and lower mountains of the Rocky Mountains and on outcrops and canyon slopes in the western Great Plains. It ranges from southern New Mexico, extending north into Wyoming, and west into the Intermountain West region. These shrublands occur between 4,900 and 9,500 feet (1,500 and 2,900 meters) elevation and are usually associated with exposed sites, rocky substrates, and dry conditions, which limit tree growth. It is common where *Quercus gambelii* is absent, such as the northern Colorado Front Range and in drier foothills and prairie hills. This system is generally drier than Rocky Mountain Gambel Oak-Mixed Montane Shrubland but may include mesic montane shrublands where *Quercus gambelii* does not occur. *Cercocarpus montanus* dominates pure stands in parts of Wyoming and Colorado. Scattered trees or inclusions of grassland patches or steppe may be present, but the vegetation is typically dominated by a variety of shrubs, including *Amelanchier utahensis, Cercocarpus montanus, Purshia tridentata, Rhus trilobata, Ribes cereum, Symphoricarpos oreophilus,* or *Yucca glauca*. Grasses are represented as species of *Muhlenbergia, Bouteloua, Hesperostipa,* and *Pseudoroegneria spicata*. Fires play an important role in this system as the dominant shrubs usually have a severe die-back, although some plants will stump sprout. *Cercocarpus montanus* requires a disturbance such as fire to reproduce, either by seed sprout or root-crown sprouting.

Fire suppression may have allowed an invasion of trees into some of these shrublands, but in many cases sites are too xeric for tree growth. In Wyoming, stands where *Cercocarpus montanus* is a component of mixed shrublands are placed in the Northern Rocky Mountain Montane-Foothill Deciduous Shrubland (NatureServe 2012).

J.1.11 Pinyon-Juniper

Colorado Plateau Pinyon-Juniper Shrubland

This ecological system is characteristic of the rocky mesatops and slopes on the Colorado Plateau and western slope of Colorado, but these stunted tree shrublands may extend further upslope along the low-elevation margins of taller pinyon-juniper woodlands. Sites are drier than Colorado Plateau Pinyon-Juniper Woodland. Substrates are shallow/rocky and shaly soils at lower elevations 3,900 to 6,500 feet (1,200 to 2,000 meters). Sparse examples of the system grade into Colorado Plateau Mixed Bedrock Canyon and Tableland. The vegetation is dominated by dwarfed (usually less than 9.5 feet [3 meters] tall) *Pinus edulis* and/or *Juniperus osteosperma* trees forming extensive tall shrublands in the region along low-elevation margins of pinyon-juniper woodlands. Other shrubs, if present, may include *Artemisia nova, Artemisia tridentata* ssp. *wyomingensis, Chrysothamnus viscidiflorus,* or *Coleogyne ramosissima*. Herbaceous layers are sparse to moderately dense and typically composed of xeric graminoids (University of Idaho 2012).

Colorado Plateau Pinyon-Juniper Woodland

This ecological system occurs in dry mountains and foothills of the Colorado Plateau region including the Western Slope of Colorado to the Wasatch Range, south to the Mogollon Rim, and east into the northwestern corner of New Mexico. It is typically found at lower elevations ranging from 4,900 to 8,000 feet (1,500 to 2,440 meters). These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture, ranging from stony, cobbly, gravelly sandy loams to clay loam or clay. *Pinus edulis* and/or *Juniperus osteosperma* dominate the tree canopy. In the southern portion of the Colorado Plateau in northern Arizona and northwestern New Mexico, *Juniperus monosperma* and hybrids of *Juniperus* spp. may dominate or codominate the tree canopy. *Juniperus scopulorum* may codominate or replace *Juniperus osteosperma* at higher elevations. Understory layers are variable and may be dominated by shrubs and graminoids or be absent. Associated species include *Arctostaphylos patula, Artemisia tridentata, Cercocarpus intricatus, Cercocarpus montanus, Coleogyne ramosissima, Purshia stansburiana, Purshia tridentata, Quercus gambelii, Bouteloua gracilis*, *Pleuraphis jamesii, Pseudoroegneria spicata, Poa secunda*, or *Poa fendleriana*. This system occurs at higher elevations than Great Basin Pinyon-Juniper Woodland and Colorado Plateau shrubland systems where sympatric (NatureServe 2012).

Great Basin Pinyon-Juniper Woodland

This ecological system occurs on dry mountain ranges of the Great Basin region and eastern foothills of the Sierra Nevada south in scattered locations throughout southern California. It is typically found at lower elevations ranging from 5,200 to 8,500 feet (1,600 to 2,600 meters). These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Woodlands dominated by a mix of *Pinus monophylla* and *Juniperus osteosperma,* pure or nearly pure occurrences of *Pinus monophylla,* or woodlands dominated solely by *Juniperus osteosperma* comprise this system, but in some regions of southern California, *Juniperus osteosperma* is replaced by *Juniperus californica*. *Cercocarpus ledifolius* is a common associate. On the east slope of the Sierras in California, *Pinus jeffreyi* and *Juniperus occidentalis* var. *australis* may be components of these woodlands. Understory layers are variable. Associated species include shrubs such as *Arctostaphylos patula, Artemisia arbuscula, Artemisia nova, Artemisia tridentata, Cercocarpus ledifolius, Cercocarpus intricatus, Coleogyne ramosissima, Yucca brevifolia, Quercus gambelii, Quercus turbinella, Quercus john-tuckeri, Juniperus californica, Quercus chrysolepis*, and bunch grasses *Hesperostipa comata, Festuca idahoensis, Pseudoroegneria spicata, Leymus cinereus (= Elymus cinereus),* and *Poa fendleriana*. This system occurs at lower elevations than Colorado Plateau Pinyon-Juniper Woodland where sympatric (NatureServe 2012).

Inter-Mountain Basins Juniper Savanna

This widespread ecological system occupies dry foothills and sandsheets of western Colorado, northwestern New Mexico, northern Arizona, Utah, and west into the Great Basin of Nevada and southern Idaho. It is typically found at lower elevations ranging from 4,920 to 7,500 feet (1,500 to 2,300 meters). This system is generally found at lower elevations and more xeric sites than Great Basin Pinyon-Juniper Woodland or Colorado Plateau Pinyon-Juniper Woodland. These occurrences are found on lower mountain slopes, hills, plateaus, basins, and flats (often where juniper is expanding into semi-desert grasslands and steppe). The vegetation is typically open savanna, although there may be inclusions of denser juniper woodlands. This savanna is typically dominated by *Juniperus osteosperma* trees with a high cover of perennial bunch grasses and forbs with *Bouteloua gracilis, Hesperostipa comata*, and *Pleuraphis jamesii* being most common. In the southern Colorado Plateau, *Juniperus monosperma* or juniper hybrids may dominate the tree layer. Pinyon trees typically are not present because sites are outside the ecological or geographic range of *Pinus edulis* and *Pinus monophylla*. It has been suggested that all *Juniperus osteosperma* stands in Wyoming be placed in Colorado Plateau Pinyon-Juniper Woodland. This savanna system does not occur in Wyoming (NatureServe 2012).

Rocky Mountain Foothill Limber Pine-Juniper Woodland

This ecological system occurs in foothill and lower montane zones in the Rocky Mountains from northern Montana south to central Colorado and on escarpments across Wyoming extending out into the western Great Plains. Elevation ranges from 3,280 to 7,870 feet (1,000 to 2,400 meters). It occurs generally below continuous forests of *Pseudotsuga menziesii* or *Pinus ponderosa* and can occur in large stands well in the zone of continuous forests in the northeastern Rocky Mountains. It is restricted to shallow soils and fractured bedrock derived from a variety of parent material, including limestone, sandstone, dolomite, granite, and colluvium. Soils have a high rock component (typically more than 50 percent cover) and are coarse- to fine-textured, often gravelly and calcareous. Slopes are typically moderately steep to steep. At higher elevations, it is limited to the most xeric aspects on rock outcrops, and at lower elevations to the relatively mesic north aspects. Fire is infrequent and spotty because rocky substrates prevent a continuous vegetation canopy needed to spread.

Vegetation is characterized by an open-tree canopy or patchy woodland that is dominated by either *Pinus flexilis, Juniperus osteosperma*, or *Juniperus scopulorum*. *Pinus edulis* is not present. A sparse to moderately dense short-shrub layer, if present, may include a variety of shrubs, such as *Arctostaphylos uva-ursi, Artemisia nova, Artemisia tridentata, Cercocarpus ledifolius, Cercocarpus montanus, Dasiphora fruticosa* ssp. *floribunda, Ericameria nauseosa, Juniperus horizontalis, Purshia tridentata, Rhus trilobata, Rosa woodsii, Shepherdia canadensis* (important in Montana stands), *Symphoricarpos albus*, or *Symphoricarpos oreophilus*. Herbaceous layers are generally sparse, but range to moderately dense, and typically are dominated by perennial graminoids such as *Bouteloua gracilis, Festuca idahoensis, Festuca campestris, Danthonia intermedia, Leucopoa kingii, Hesperostipa comata, Koeleria macrantha, Piptatherum micranthum, Poa secunda*, or *Pseudoroegneria spicata*. In this ecological system, there may be small patches of grassland or shrubland composed of some of the above species. In

Wyoming, some limber pine stands are found up to 8,000 feet (2,440 meters) and are still included in this system (NatureServe 2012).

Southern Rocky Mountain Pinyon-Juniper Woodland

This southern Rocky Mountain ecological system occurs on dry mountains and foothills in southern Colorado east of the Continental Divide, in mountains and plateaus of north-central New Mexico, and extends out onto limestone breaks in the southeastern Great Plains. These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay. *Pinus edulis* and/or *Juniperus monosperma* dominate the tree canopy. *Juniperus scopulorum* may codominate or replace *Juniperus monosperma* at higher elevations. Stands with *Juniperus osteosperma* are representative of the Colorado Plateau and are not included in this system. In southern transitional areas between Madrean Pinyon-Juniper Woodland and Southern Rocky Mountain Pinyon-Juniper Woodland in central New Mexico, *Juniperus deppeana* becomes common. Understory layers are variable and may be dominated by shrubs and graminoids or be absent. Associated species are more typical of southern Rocky Mountains than the Colorado Plateau and include *Artemisia bigelovii, Cercocarpus montanus, Quercus gambelii, Achnatherum scribneri, Bouteloua gracilis, Festuca arizonica,* or *Pleuraphis jamesii* (NatureServe 2012).

J.1.12 Ponderosa Pine

Northern Rocky Mountain Foothill Conifer Wooded Steppe

This inland Pacific Northwest ecological system occurs in the foothills of the northern Rocky Mountains in the Columbia Plateau region and west along the foothills of the Modoc Plateau and eastern Cascades into southern interior British Columbia. It also occurs east across Idaho into the eastern foothills of the Montana Rockies. The system also may occur on the lower treeline slopes of the Wyoming Rockies. These wooded steppes occur at the lower treeline/ecotone between grasslands or shrublands and forests and woodlands, typically on warm, dry, exposed sites too droughty to support a closed tree canopy. This is not a fire-maintained system. The savanna character results from a climate-edaphic interaction that results in widely scattered trees over shrubs or grasses, and even in the absence of fire, a woodland or forest structure will not be obtained. Elevations range from less than 1,640 feet (500 meters) in British Columbia to 5,200 feet (1,600 meters) in the central Idaho Mountains. Occurrences are found on all slopes and aspects; however, moderately steep to very steep slopes or ridgetops are most common. This system can occur in association with cliff and canyon systems. It generally occurs on glacial till, glacio-fluvial sand and gravel, dune, basaltic rubble, colluvium, to deep loess or volcanic ash-derived soils, with characteristic features of good aeration and drainage, coarse textures, circumneutral to slightly acidic pH, an abundance of mineral material, rockiness, and periods of drought during the growing season. These also can occur on areas of sand dunes, scablands, and pumice where the edaphic conditions limit tree abundance.

Pinus ponderosa (vars. *ponderosa* and *scopulorum*) and *Pseudotsuga menziesii* are the predominant conifers (not always together); *Pinus flexilis* may be present or common in the tree canopy. In interior British Columbia, *Pseudotsuga menziesii* is the characteristic canopy dominant. In transition areas with big sagebrush steppe systems, *Purshia tridentata, Artemisia tridentata* ssp. *wyomingensis, Artemisia tridentata* ssp. *tridentata,* and *Artemisia tripartita* may be common in fire-protected sites such as rocky areas. Deciduous shrubs, such as *Physocarpus malvaceus, Symphoricarpos albus,* or *Spiraea betulifolia,* can be abundant in more northerly sites or more moist climates. Important grass species include *Pseudoroegneria spicata, Poa secunda, Hesperostipa* spp., *Achnatherum* spp., and *Elymus elymoides* (NatureServe 2012).

Southern Rocky Mountain Ponderosa Pine Woodland

This very widespread ecological system is most common throughout the cordillera of the Rocky Mountains, from the Greater Yellowstone region south. It is also found in the Colorado Plateau region, west into scattered locations of the Great Basin. Its easternmost extent in Wyoming is in the Bighorn Mountains. These woodlands occur at the lower treeline/ecotone between grassland or shrubland and more mesic coniferous forests typically in warm, dry, exposed sites. Elevations range from less than 6,230 feet (1,900 meters) in northern Wyoming to 9,180 feet (2,800 meters) in the New Mexico Mountains. Occurrences are found on all slopes and aspects; however, moderately steep to very steep slopes or ridgetops are most common. This ecological system generally occurs on soils derived from igneous, metamorphic, and sedimentary material with characteristic features of good aeration and drainage, coarse textures, circumneutral to slightly acidic pH, an abundance of mineral material, rockiness, and periods of drought during the growing season. Northern Rocky Mountain Ponderosa Pine Woodland and Savanna in the eastern Cascades, Okanogan, and northern Rockies regions receives winter and spring rains, and thus has a greater spring green-up than the drier woodlands in the central Rockies.

Pinus ponderosa (primarily var. *scopulorum* and var. *ponderosa* (= var. *brachyptera*)) is the predominant conifer; *Pseudotsuga menziesii, Pinus edulis, Pinus contorta, Populus tremuloides*, and *Juniperus* spp. may be present in the tree canopy. The understory is usually shrubby, with *Artemisia nova, Artemisia tridentata, Arctostaphylos patula, Arctostaphylos uva-ursi, Cercocarpus montanus, Purshia stansburiana, Purshia tridentata, Quercus gambelii, Symphoricarpos* spp., *Prunus virginiana, Amelanchier alnifolia* (less so in Montana), and *Rosa* spp. common species. *Pseudoroegneria spicata*, *Pascopyrum smithii*, and species of *Hesperostipa*, *Achnatherum, Festuca, Muhlenbergia*, and *Bouteloua* are some of the common grasses. Mixed fire regimes and ground fires of variable return intervals maintain these woodlands, depending on climate, degree of soil development, and understory density (NatureServe 2012).

J.1.13 Riparian

Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland

This system occurs in mountain ranges of the Great Basin and along the eastern slope of the Sierra Nevada in a broad elevation range from about 4,000 feet (1,220 meters) to more than 7,000 feet (2,135 meters). This system often occurs as a mosaic of multiple communities that are tree-dominated with a diverse shrub component. The variety of plant associations connected to this system reflects elevation, stream gradient, floodplain width, and flooding events. Dominant trees may include *Abies concolor, Alnus incana, Betula occidentalis, Populus angustifolia, Populus balsamifera* ssp. *trichocarpa, Populus fremontii, Salix laevigata, Salix gooddingii*, and *Pseudotsuga menziesii*. Dominant shrubs include *Artemisia cana, Cornus sericea, Salix exigua, Salix lasiolepis, Salix lemmonii*, or *Salix lutea*. Herbaceous layers often are dominated by species of *Carex* and *Juncus*, and perennial grasses and mesic forbs such *Deschampsia caespitosa, Elymus trachycaulus, Glyceria striata, Iris missouriensis, Maianthemum stellatum*, or *Thalictrum fendleri*. Introduced forage species such as *Agrostis stolonifera, Poa pratensis, Phleum pratense*, and the weedy annual *Bromus tectorum* often are present in disturbed stands. These are disturbance-driven systems that require flooding, scour, and deposition for germination and maintenance. Livestock grazing is a major influence in altering structure, composition, and function of the community (NatureServe 2012).

Introduced Riparian and Wetland Vegetation

Vegetation dominated (typically greater than 60 percent canopy cover) by introduced species. These are spontaneous, self-perpetuating, and not (immediately) the result of planting, cultivation, or human maintenance. Land occupied by introduced vegetation generally is altered (converted) permanently unless restoration efforts are undertaken. Specifically, land cover is significantly altered/disturbed by introduced riparian and wetland vegetation (University of Idaho 2012).

Northwestern Great Plains Riparian

This system is found in the riparian areas of medium and small rivers and streams throughout the northwestern Great Plains. It is likely most common in the Northern Great Plains Steppe. This system occurs in the Upper Missouri and tributaries starting at the Niobrara, White, Cheyenne, Belle Fourche, Moreau, Grand, Heart, Little Missouri, Yellowstone, Powder, Tongue, Bighorn, Wind, Milk, Musselshell, Marias, and Teton rivers; and in Canada, the Southern Saskatchewan, Red Deer and Old Man rivers to where they extend into Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland or Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland. These are found on alluvial soils in highly variable landscape settings, from deep cut ravines to wide, braided streambeds. Hydrologically, these tend to be more flashy with less developed floodplain than on larger rivers, and typically dry down completely for some portion of the year. Dominant vegetation shares much with generally drier portions of larger floodplain systems downstream, but overall abundance of vegetation is generally lower. Communities in this system range from riparian forests and shrublands to gravel/sand flats. Dominant species include *Populus deltoides, Populus balsamifera* ssp. *trichocarpa, Salix* ssp., *Artemisia cana* ssp. *cana*, and *Pascopyrum smithii*. These areas often are subjected to heavy grazing and/or agriculture and can be heavily degraded. Another factor is that groundwater depletion and lack of fire have created additional species changes (NatureServe 2012).

Rocky Mountain Bigtooth Maple Ravine Woodland

This ecological system occurs in cool ravines, on toeslopes and slump benches associated with riparian areas in the northern and central Wasatch Range and Tavaputs Plateau extending into southern Idaho, as well as in scattered localities in southwestern Utah, central Arizona, and New Mexico, and the Trans-Pecos of Texas. Substrates are typically rocky colluvial or alluvial soils with favorable soil moisture. These woodlands are dominated by *Acer grandidentatum* but may include mixed stands codominated by *Quercus gambelii* or with scattered conifers. Some stands may include *Acer negundo* or *Populus tremuloides* as minor components. It also occurs on steeper, north-facing slopes at higher elevations, often adjacent to Rocky Mountain Gambel Oak-Mixed Montane Shrubland or Rocky Mountain Aspen Forest and Woodland (NatureServe 2012).

Rocky Mountain Lower Montane Riparian Woodland and Shrubland

This ecological system of the northern Rocky Mountains and the east slopes of the Cascades consists of deciduous, coniferous, and mixed conifer-deciduous forests that occur on streambanks and river floodplains of the lower montane and foothill zones. Riparian forest stands are maintained by annual flooding and hydric soils throughout the growing season. Riparian forests often are accompanied by riparian shrublands or open areas dominated by wet meadows. *Populus balsamifera* is the key indicator species. Several other tree species can be mixed in the canopy, including *Populus tremuloides, Betula papyrifera, Betula occidentalis, Picea mariana*, and *Picea glauca*. *Abies grandis, Thuja plicata*, and *Tsuga heterophylla* are commonly dominant canopy species in western Montana and northern Idaho occurrences, in lower montane riparian zones. Shrub understory components include *Cornus sericea, Acer glabrum, Alnus incana, Betula papyrifera, Oplopanax horridus*, and *Symphoricarpos albus*. Ferns and forbs of mesic sites are commonly present in many occurrences, including such species as *Athyrium filix-femina, Gymnocarpium dryopteris*, and *Senecio triangularis* (NatureServe 2012).

Rocky Mountain Subalpine-Montane Riparian Shrubland

This system is found throughout the Rocky Mountain cordillera from New Mexico north into Montana and northwestern Alberta and also occurs in mountainous areas of the Intermountain West region and Colorado Plateau. These are montane to subalpine riparian shrublands occurring as narrow bands of shrubs lining streambanks and alluvial terraces in narrow-to-wide, low-gradient valley bottoms and floodplains with sinuous stream channels. Generally, the system is found at higher elevations, but can be found anywhere from 4,920 to 11,400 feet (1,500 to 3,475 meters), and may occur at even lower elevations in the Canadian Rockies. Occurrences also can be found around seeps, fens, and isolated springs on hillslopes away from valley bottoms. Many of the plant associations found in this system are associated with beaver activity. This system often occurs as a mosaic of multiple communities that are shrub- and herb-dominated and includes above-treeline, willow-dominated, snowmelt-fed basins that feed into streams. The dominant shrubs reflect the large elevational gradient and include *Alnus incana, Betula glandulosa, Betula occidentalis, Cornus sericea, Salix bebbiana, Salix boothii, Salix brachycarpa, Salix drummondiana, Salix eriocephala, Salix geyeriana, Salix monticola, Salix planifolia*, and *Salix wolfii*. Generally, the upland vegetation surrounding these riparian systems are of either conifer or aspen forests (NatureServe 2012).

Rocky Mountain Subalpine-Montane Riparian Woodland

This riparian woodland system is composed of seasonally flooded forests and woodlands found at montane to subalpine elevations of the Rocky Mountain cordillera, from southern New Mexico north into Montana, and west into the Intermountain region and the Colorado Plateau. It occurs throughout the interior of British Columbia and the eastern slopes of the Cascade Mountains. This system contains the conifer and aspen woodlands that line montane streams. These are communities tolerant of periodic flooding and high water tables. Snowmelt moisture in this system may create shallow water tables or seeps for a portion of the growing season. Stands typically occur at elevations between 4,920 and 10,830 feet (1,500 and 3,300 meters), farther north elevation ranges between 2,950 and 6,560 feet (900 and 2,000 meters). This is confined to specific riparian environments occurring on floodplains or terraces of rivers and streams, in V-shaped, narrow valleys and canyons (where there is cold-air drainage). Less frequently, occurrences are found in moderate-wide valley bottoms on large floodplains along broad, meandering rivers, and on pond or lake margins. Dominant tree species vary across the latitudinal range, although it usually includes *Abies lasiocarpa* and/or *Picea engelmannii*; other important species include *Pseudotsuga menziesii, Picea pungens, Picea engelmannii X glauca, Populus tremuloides*, and *Juniperus scopulorum*. Other trees possibly present but not usually dominant include *Alnus incana, Abies concolor, Abies grandis, Pinus contorta, Populus angustifolia, Populus balsamifera* ssp. *trichocarpa*, and *Juniperus osteosperma* (NatureServe 2012).

Western Great Plains Floodplain

This ecological system is found in the floodplains of medium and large rivers of the western Great Plains. It occurs on the lower reaches of the North and South Platte, Platte, Arkansas, and Canadian rivers. Alluvial soils and periodic, intermediate flooding (every 5 to 25 years) typify this system. These are the perennial big rivers of the region with hydrologic dynamics largely driven by snowmelt in the mountains, instead of local precipitation events. Dominant communities in this system range from floodplain forests to wet meadows to gravel/sand flats; however, they are linked by underlying soils and the flooding regime. Dominant species include *Populus deltoides* and *Salix* spp. Grass cover underneath the trees is an important part of this system and is a mix of tallgrass species, including *Panicum virgatum* and *Andropogon gerardii*. Sometimes, *Tamarix* spp. and less desirable or exotic grasses and forbs can invade degraded areas in the floodplains, especially in the western portion of the province. These areas often are subjected to heavy grazing and/or agriculture and can be heavily degraded. Groundwater depletion and lack of fire have created additional alterations in species composition. In most cases, the majority of the wet meadow and prairie communities may be extremely degraded or extirpated from examples of this system (NatureServe 2012).

Western Great Plains Riparian Woodland and Shrubland

These are the stream and creekside woodlands and shrublands found in the western Great Plains. They usually occur in shortgrass prairie or other types of grasslands. They occur in draws and along small rivers in deep cut ravines to wider meandering streambeds. Flows in these streams can be flashy, and may dry down completely for some portion of the year. Dominant species vary with the size of the stream and valley type. Plains cottonwood, willows, and silver sagebrush are the most common with an herbaceous understory composed of grasses including little bluestem, western wheatgrass, and sand dropseed. Heavy use such as frequent livestock grazing or heavy agricultural runoff can increase stream salinity resulting in nonnative trees such as tamarisk and Russian olive replacing native species. See also a similar system that occurs along larger rivers, for example the South Platte, called the Western Great Plains Floodplain System (University of Idaho 2012).

National Wetlands Inventory

Refer to Section J.1.16 for the discussion about the NWI.

J.1.14 Shrub/Shrub Steppe

Colorado Plateau Blackbrush-Mormon-tea Shrubland

This ecological system occurs in the Colorado Plateau on benchlands, colluvial slopes, pediments or bajadas. Elevation ranges from 1,835 to 5,410 feet (560 to 1,650 meters). Substrates are shallow, typically calcareous, non-saline and gravelly or sandy soils over sandstone or limestone bedrock, caliche, or limestone alluvium. It also occurs in deeper soils on sandy plains where it may have invaded desert grasslands. The vegetation is characterized by extensive open shrublands dominated by *Coleogyne ramosissima* often with *Ephedra viridis, Ephedra torreyana*, or *Grayia spinosa*. Sandy portions may include *Artemisia filifolia* as codominant. The herbaceous layer is sparse and composed of graminoids such as *Achnatherum hymenoides, Pleuraphis jamesii*, or *Sporobolus cryptandrus* (NatureServe 2012).

Colorado Plateau Mixed Low Sagebrush Shrubland

This ecological system occurs in the Colorado Plateau, Tavaputs Plateau, and Uinta Basin in canyons, gravelly draws, hilltops, and dry flats at elevations generally below 5,900 feet (1,800 meters). Soils are often rocky, shallow, and alkaline. This type extends across northern New Mexico into the southern Great Plains on limestone hills. It includes open shrublands and steppe dominated by *Artemisia nova* or *Artemisia bigelovii* sometimes with *Artemisia tridentata* ssp. *wyomingensis* codominant. Semi-arid grasses such as *Achnatherum hymenoides, Aristida purpurea, Bouteloua gracilis, Hesperostipa comata, Pleuraphis jamesii*, or *Poa fendleriana* often are present and may form a graminoid layer with more than 25 percent cover (NatureServe 2012).

Great Basin Xeric Mixed Sagebrush Shrubland

This ecological system occurs in the Great Basin on dry flats and plains, alluvial fans, rolling hills, rocky hillslopes, saddles, and ridges at elevations between 3,280 and 8,525 feet (1,000 and 2,600 meters). Sites are dry, often exposed to desiccating winds, with typically shallow, rocky, non-saline soils. Shrublands are dominated by *Artemisia nova* (mid and low elevations), *Artemisia arbuscula* ssp. *longicaulis*, or *Artemisia arbuscula* ssp. *longiloba* (higher elevation) and may be codominated by *Artemisia tridentata* ssp. *wyomingensis* or *Chrysothamnus viscidiflorus*. Other shrubs that may be present include *Atriplex* *confertifolia, Ephedra* spp., *Ericameria* spp., *Grayia spinosa, Lycium shockleyi, Picrothamnus desertorum, Sarcobatus vermiculatus,* and *Tetradymia* spp. The herbaceous layer is likely sparse and composed of perennial bunch grasses, such as *Achnatherum hymenoides, Achnatherum speciosum, Achnatherum thurberianum, Elymus elymoides*, or *Poa secunda* (NatureServe 2012).

Inter-Mountain Basins Greasewood Flat

This ecological system occurs throughout much of the western United States in Intermountain basins and extends onto the western Great Plains and into central Montana. It typically occurs near drainages on stream terraces and flats or may form rings around more sparsely vegetated playas. Sites typically have saline soils, a shallow water table, and flood intermittently, but remain dry for most growing seasons. The water table remains high enough to maintain vegetation, despite salt accumulations. This system usually occurs as a mosaic of multiple communities with open to moderately dense shrublands dominated or codominated by *Sarcobatus vermiculatus*. Other shrubs that may be present to codominant in some occurrences include *Atriplex canescens, Atriplex confertifolia, Atriplex gardneri, Artemisia tridentata* ssp. *wyomingensis, Artemisia tridentata* ssp. *tridentata, Artemisia cana* ssp. *cana*, or *Krascheninnikovia lanata*. Occurrences often are surrounded by mixed salt desert scrub or big sagebrush shrublands. The herbaceous layer, if present, is usually dominated by graminoids. There may be inclusions of *Sporobolus airoides, Pascopyrum smithii, Distichlis spicata* (where water remains ponded the longest), *Calamovilfa longifolia, Poa pratensis, Puccinellia nuttalliana*, or *Eleocharis palustris* herbaceous types (NatureServe 2012).

Inter-Mountain Basins Mat Saltbush Shrubland

This ecological system occurs on gentle slopes and rolling plains in the northern Colorado Plateau and Uinta Basin on Mancos shale and arid, windswept basins and plains across parts of Wyoming. It is also found in eastern Wyoming in the Great Plains areas and may extend north into Montana and Canada. Substrates are shallow, typically saline, alkaline, fine-textured soils developed from shale or alluvium and may be associated with shale badlands. Infiltration rate is typically low. These landscapes typically support dwarf-shrublands composed of relatively pure stands of *Atriplex* spp., such as *Atriplex corrugata* (in Colorado and Utah) or *Atriplex gardneri* (Wyoming and Montana into Canada). Other dominant or codominant dwarf-shrubs may include *Artemisia longifolia, Artemisia pedatifida* (very important in Wyoming, rare in Colorado stands), or *Picrothamnus desertorum*, sometimes with a mix of other low shrubs, such as *Krascheninnikovia lanata* or *Tetradymia spinosa*. *Atriplex confertifolia* or *Atriplex canescens* may be present but do not codominate. *Artemisia tridentata* ssp. *wyomingensis* can occur in patches in this system.

The herbaceous layer is typically sparse. Scattered perennial forbs occur, such as *Xylorhiza glabriuscula* and *Sphaeralcea grossulariifolia*; perennial grasses *Achnatherum hymenoides, Bouteloua gracilis* (not in Wyoming), *Elymus elymoides, Elymus lanceolatus* ssp. *lanceolatus, Pascopyrum smithii, Poa secunda*, or *Sporobolus airoides* may dominate the herbaceous layer. In less saline areas, there may be inclusions of grasslands dominated by *Hesperostipa comata, Leymus salinus, Pascopyrum smithii*, or *Pseudoroegneria spicata*. In Wyoming and possibly elsewhere, inclusions of non-saline, gravelly barrens or rock outcrops dominated by cushion plants such as *Arenaria hookeri* and *Phlox hoodii* without dwarf-shrubs may be present (these are not restricted to this system). Annuals are seasonally present and may include *Eriogonum inflatum, Plantago tweedyi, Monolepis nuttalliana*, and the introduced annual grass *Bromus tectorum*. In Montana, *Atriplex gardneri* also occurs associated with badlands and determining which system it falls into may be difficult (NatureServe 2012).

Inter-Mountain Basins Mixed Salt Desert Scrub

This extensive ecological system includes open-canopied shrublands of typically saline basins, alluvial slopes, and plains across the Intermountain western United States. This type also extends in limited distribution into the southern Great Plains. Substrates are often saline and calcareous, medium- to fine-textured, alkaline soils, but include some coarser-textured soils. The vegetation is characterized by a typically open to moderately dense shrubland composed of one or more *Atriplex* species, such as *Atriplex confertifolia*, *Atriplex canescens*, *Atriplex polycarpa*, or *Atriplex spinifera*. *Grayia spinosa* tends to occur on coppice dunes that may have a silty component to them. Northern occurrences lack *Atriplex* species and typically are dominated by *Grayia spinosa*, *Krascheninnikovia lanata*, and/or *Artemisia tridentata*. Other shrubs present to codominant may include *Artemisia tridentata* ssp. *wyomingensis, Chrysothamnus viscidiflorus, Ericameria nauseosa, Ephedra nevadensis, Grayia spinosa, Krascheninnikovia lanata, Lycium* spp., *Picrothamnus desertorum*, or *Tetradymia* spp. In Wyoming, occurrences are typically a mix of *Atriplex confertifolia, Grayia spinosa, Artemisia tridentata* ssp. *wyomingensis, Sarcobatus vermiculatus, Krascheninnikovia lanata*, and various *Ericameria* or *Chrysothamnus* species. Some places are a mix of *Atriplex confertifolia* and *Artemisia tridentata* ssp. *wyomingensis*. In the Great Basin, *Sarcobatus vermiculatus* is generally absent but, if present, does not codominate. The herbaceous layer varies from sparse to moderately dense and is dominated by perennial graminoids such as *Achnatherum hymenoides, Bouteloua gracilis, Elymus lanceolatus* ssp. *lanceolatus, Pascopyrum smithii, Pleuraphis jamesii, Pleuraphis rigida*, *Poa secunda*, or *Sporobolus airoides*. Various forbs also are present (NatureServe 2012).

Inter-Mountain Basins Semi-Desert Shrub-Steppe

This ecological system occurs throughout the Intermountain western United States, typically at lower elevations on alluvial fans and flats with moderate to deep soils, and extends into south-central Montana between the Pryor and Beartooth ranges where a distinct rainshadow effect occurs. This semi-arid shrub-steppe is typically dominated by graminoids (greater than 25 percent cover) with an open shrub to moderately dense woody layer with a typically strong graminoid layer. The most widespread (but not dominant) species is *Pseudoroegneria spicata*, which occurs from the Columbia Basin to the northern Rockies. Characteristic grasses include *Achnatherum hymenoides, Bouteloua gracilis, Distichlis spicata, Poa secunda, Poa fendleriana, Sporobolus airoides, Hesperostipa comata, Pleuraphis jamesii*, and *Leymus salinus*. The woody layer is often a mixture of shrubs and dwarf-shrubs, although it may be dominated by a single species. Characteristic species include *Atriplex canescens, Artemisia tridentata, Chrysothamnus greenei, Chrysothamnus viscidiflorus, Ephedra* spp., *Ericameria nauseosa, Gutierrezia sarothrae*, and *Krascheninnikovia lanata*. *Artemisia tridentata* or *Atriplex canescens* may be present but does not dominate. Annual grasses, especially the exotics *Bromus japonicus* and *Bromus tectorum*, may be present to abundant. Forbs are generally of low importance and are highly variable across the range but may be diverse in some occurrences. The general aspect of occurrences may be either open shrubland with patchy grasses or patchy open herbaceous layers. Disturbance may be important in maintaining the woody component. Microphytic crust is very important in some stands (NatureServe 2012).

Southern Colorado Plateau Sand Shrubland

This large-patch ecological system is found on the south-central Colorado Plateau in northeastern Arizona extending into southern and central Utah. It occurs on windswept mesas, broad basins, and plains at low to moderate elevations (4,260 to 5,900 feet [1,300 to 1,800 meters]). Substrates are stabilized sandsheets or shallow to moderately deep sandy soils that may form small hummocks or small coppice dunes. This semi-arid, open shrubland is typically dominated by short shrubs (10 to 30 percent cover) with a sparse graminoid layer. The woody layer is often a mixture of shrubs and dwarf-shrubs. Characteristic species include *Ephedra cutleri*, *Ephedra torreyana*, *Ephedra viridis*, and *Artemisia filifolia*. *Coleogyne ramosissima* is typically not present. *Poliomintha incana, Parryella filifolia, Quercus havardii* var.

tuckeri, or *Ericameria nauseosa* may be present to dominant locally. *Ephedra cutleri* and *Ephedra viridis* often assume a distinctive matty growth form. Characteristic grasses include *Achnatherum hymenoides, Bouteloua gracilis, Hesperostipa comata*, and *Pleuraphis jamesii*. The general aspect of occurrences is an open low shrubland but may include small blowouts and dunes. Occasionally grasses may be moderately abundant locally and form a distinct layer. Disturbance may be important in maintaining the woody component. Eolian processes are evident, such as pediceled plants, occasional blowouts or small dunes, but the generally higher vegetative cover and less prominent geomorphic features distinguish this system from Inter-Mountain Basins Active and Stabilized Dune (NatureServe 2012).

Wyoming Basins Dwarf Sagebrush Shrubland and Steppe

This windswept ecological system is composed of dwarf sagebrush shrubland and shrub-steppe that forms matrix vegetation and large patches on the margins of high-elevation basins in central and southern Wyoming. Typical sites are gently rolling hills and long, gently sloping pediments and fans. These sites are very windy and have shallow, often rocky soils. The distinguishing feature of this system is a short-shrub stratum in which dwarf-shrubs (less than 12 inches [30 centimeters] tall) contribute at least two-thirds of the woody canopy. Four sagebrush taxa may dominate the shrub stratum: *Artemisia tripartita* ssp. *rupicola, Artemisia nova, Artemisia arbuscula* ssp. *longiloba*, and wind-dwarfed *Artemisia tridentata* ssp. *wyomingensis*. Two or more of these sagebrushes often codominate, but any of them may occur alone. Where graminoids are common and tall, the vegetation often has the appearance of grassland without shrubs; the shrubs are obvious only when the vegetation is viewed from up close. Where graminoids contribute less cover, the vegetation is a compact shrubland. The herbaceous component of the vegetation includes both rhizomatous and bunch-form graminoids, cushion plants, and other low-growing forbs. *Bouteloua gracilis*, a common species of Inter-Mountain Basins Big Sagebrush Steppe in Wyoming, is absent (NatureServe 2012).

J.1.15 Water

Open Water (Fresh)

This ecological system includes all areas of open water with generally less than 25 percent cover of vegetation or soil, specifically inland waters of streams, rivers, ponds, and lakes (University of Idaho 2012).

J.1.16 Wetlands

Great Plains Prairie Pothole

The prairie pothole system is found primarily in the glaciated northern Great Plains of the United States and Canada, and is dominated by depressional wetlands formed by glaciers scraping the landscape during the Pleistocene era. This system is typified by several classes of wetlands distinguished by changes in topography, soils, and hydrology. Many of the basins in this system are closed basins and receive irregular inputs of water from their surroundings (groundwater and precipitation) and export water as groundwater. Hydrology of the potholes is complex. Precipitation and runoff from snowmelt are often the principal water sources with groundwater inflow secondary. Evapotranspiration is the major water loss with seepage loss secondary. Most of the wetlands and lakes contain water that is alkaline (pH greater than 7.4). The concentration of dissolved solids results in water that ranges from fresh to extremely saline. The flora and vegetation of this system are a function of the topography, water regime, and salinity. In addition, because of periodic droughts and wet periods, many wetlands in this system may undergo vegetation cycles. This system includes elements of emergent marshes and wet sedge meadows that develop into a pattern of concentric rings. This system is responsible for a significant percentage of the annual production of many economically important waterfowl in North America and houses more than 50 percent of North American's migratory waterfowl with several species reliant on this system for breeding and feeding. Much of the original extent of this system has been converted to agriculture, and only approximately 40 to 50 percent of the system remains undrained (NatureServe 2012).

Inter-Mountain Basins Interdunal Swale Wetland

This ecological system occurs in dune fields in the Intermountain western United States as small (usually less than 0.1 hectare) interdunal wetlands that occur in wind deflation areas, where sands are scoured down to the water table. Small ponds may be associated. The water table may be perched over an impermeable layer of caliche or clay or, in the case of the Great Sand Dunes of Colorado, a geologic dike that creates a closed basin that traps water. These wetland areas typically are dominated by common emergent herbaceous vegetation such as species of *Eleocharis, Juncus*, and *Schoenoplectus*. Dune field ecological processes distinguish these emergent wetlands from similar non-dune wetlands (NatureServe 2012).

North American Arid West Emergent Marsh

This widespread ecological system occurs throughout much of the arid and semi-arid regions of western North America, typically surrounded by savanna, shrub-steppe, steppe, or desert vegetation. Natural marshes may occur in depressions in the landscape (ponds, kettle ponds), as fringes around lakes, and along slow-flowing streams and rivers (such riparian marshes also are referred to as sloughs). Marshes are frequently or continually inundated, with water depths up to 6.5 feet (2 meters). Water levels may be stable, or may fluctuate 3.3 feet (1 meter) or more over the course of the growing season. Water chemistry may include some alkaline or semi-alkaline situations, but the alkalinity is highly variable even in the same complex of wetlands. Marshes have distinctive soils that are typically mineral, but also can accumulate organic material. Soils have characteristics that result from long periods of anaerobic conditions in the soils (e.g., gleyed soils, high organic content, redoximorphic features). The vegetation is characterized by herbaceous plants that are adapted to saturated soil conditions. Common emergent and floating vegetation includes species of *Scirpus* and/or *Schoenoplectus, Typha, Juncus, Potamogeton, Polygonum, Nuphar*, and *Phalaris*. This system also may include areas of relatively deep water with floating-leaved plants (*Lemna, Potamogeton*, and *Brasenia*) and submerged and floating plants (*Myriophyllum, Ceratophyllum*, and *Elodea*) (NatureServe 2012).

Rocky Mountain Subalpine-Montane Fen

This system occurs infrequently throughout the Rocky Mountains from Colorado north into Canada. It is confined to specific environments defined by groundwater discharge, soil chemistry, and peat accumulation of at least 15.75 inches (40 centimeters). This system includes extreme rich fens and iron fens, both being quite rare. Fens form at low points in the landscape or near slopes where groundwater intercepts the soil surface. Groundwater inflows maintain a fairly constant water level year-round with water at or near the surface most of the time. Constant high water levels lead to accumulation of organic material. In addition to peat accumulation and perennially saturated soils, the extreme rich and iron fens have distinct soil and water chemistry with high levels of one or more minerals such as calcium, magnesium, or iron. These fens usually occur as a mosaic of several plant associations dominated by *Carex aquatilis, Carex limosa, Carex lasiocarpa, Betula glandulosa, Kobresia myosuroides, Kobresia simpliciuscula*, and *Trichophorum pumilum (= Scirpus pumilus)*. *Sphagnum* spp. (peatmoss) is indicative of iron fens. The surrounding landscape may be ringed with other wetland systems (e.g., riparian shrublands) or a variety of upland systems from grasslands to forests (NatureServe 2012).

Western Great Plains Closed Depression Wetland

Communities associated with the playa lakes in the southern areas of this province and the rainwater basins in Nebraska characterize this system. They are primarily upland depressional basins. This hydric system is typified by the presence of an impermeable layer such as a dense clay, hydric soil and is usually recharged by rainwater and nearby runoff. They are rarely linked to outside groundwater sources and do not have an extensive watershed. Ponds and lakes associated with this system can experience periodic drawdowns during drier seasons and years and often are replenished by spring rains. *Eleocharis* spp., *Hordeum jubatum*, along with common forbs such as *Coreopsis tinctoria, Symphyotrichum subulatum (= Aster subulatus)*, and *Polygonum pensylvanicum (= Polygonum bicorne)* are common vegetation in the wetter and deeper depression, while *Pascopyrum smithii* and *Buchloe dactyloides* are more common in shallow depressions in rangeland. Species richness can vary considerably among individual examples of this system and is especially influenced by adjacent land use, which is often agriculture, and may provide nutrient and herbicide runoff. Dynamic processes that affect these depressions are hydrological changes, grazing, and conversion to agricultural use (NatureServe 2012).

Western Great Plains Open Freshwater Depression Wetland

This Great Plains emergent marsh ecological system is composed of lowland depressions; it also occurs along lake borders that have more open basins and a permanent water source through most of the year, except during exceptional drought years. These areas are distinct from Western Great Plains Closed Depression Wetland by having a large watershed and/or significant connection to the groundwater table. A variety of species are part of this system, including emergent species of *Typha, Carex, Eleocharis, Juncus*, *Spartina*, and *Schoenoplectus*, as well as floating genera such as *Potamogeton, Sagittaria, Stuckenia*, or *Ceratophyllum*. The system includes submergent and emergent marshes and associated wet meadows and wet prairies. These types also can drift into stream margins that are more permanently wet and linked directly to the basin via groundwater flow from/into the pond or lake. Some of the specific communities will also be found in the floodplain system and should not be considered a separate system in that case. These types should also not be considered a separate system if they are occurring in lowland areas of the prairie matrix only because of an exceptionally wet year (NatureServe 2012).

Western Great Plains Saline Depression Wetland

This ecological system is very similar to Western Great Plains Open Freshwater Depression Wetland and Western Great Plains Closed Depression Wetland. However, strongly saline soils cause both the shallow lakes and depressions and the surrounding areas to be more brackish. Salt encrustations can occur on the surface in some examples of this system, and the soils are severely affected and have poor structure. Species that typify this system are salt-tolerant and halophytic species such as *Distichlis spicata, Sporobolus airoides*, and *Hordeum jubatum*. Other commonly occurring taxa include *Puccinellia nuttalliana, Salicornia rubra, Schoenoplectus maritimus, Schoenoplectus americanus, Suaeda calceoliformis, Spartina* spp., *Triglochin maritima*, and shrubs such as *Sarcobatus vermiculatus* and *Krascheninnikovia lanata*. During exceptionally wet years, an increase in precipitation can dilute the salt concentration in the soils of some examples of this system that may allow for less salt-tolerant species to occur. Communities found in this system also may occur in floodplains (i.e., more open depressions) but probably should not be considered a separate system unless they transition to areas outside the immediate floodplain (NatureServe 2012).

National Wetlands Inventory

The NWI data for Wyoming, Colorado, and Utah were downloaded from the FWS in January 2012. These data were incorporated into the dataset downloaded from the GAP to provide a more comprehensive inventory of wetland and riparian habitats in the Project area. NWI data coincided with

GAP data when the data sets were merged. NWI data are reported in areas where GAP data reported upland land cover categories and NWI reported wetland or riparian cover types. GAP data are reported in areas where both NWI and GAP reported wetland or riparian land cover types, or where GAP reported wetland or riparian cover types and NWI reported upland vegetation.

J.2 Noxious Weeds in the Project Area

Tables J-2 through J-4 present lists of designated noxious weeds in the three states crossed by the Project. Tables J-2, J-4, and J-5 also contain information on noxious weed occurrences in BLM field offices and national forests crossed by the Project, where available.

TABLE J-2
STATE- AND COUNTY-LISTED NOXIOUS WEEDS IN WYOMING
FOR LANDS IN THE PROJECT AREA

Common Name[1]	**Scientific Name**	**State-listed**	**Rawlins Field Office Occurrence**[2]
Canada thistle	*Cirsium arvense*	✓	✓
Common burdock	*Arctium minus*	✓	✓
Common St. Johnswort	*Hypericum perforatum*	✓	UK
Common tansy	*Tanacetum vulgare*	✓	–
Dalmatian toadflax	*Linaria dalmatica*	✓	✓
Diffuse knapweed	*Centaurea diffusa*	✓	✓
Dyer's woad	*Isatis tinctoria*	✓	✓
Field bindweed	*Convolvulus arvensis*	✓	✓
Hoary cress	*Cardaria draba*	✓	✓
Houndstongue	*Cynoglossum officinale*	✓	✓
Leafy spurge	*Euphorbia esula*	✓	✓
Musk thistle	*Carduus nutans*	✓	✓
Oxeye daisy	*Chrysanthemum leucanthemum*	✓	✓
Perennial pepperweed	*Lepidium latifolium*	✓	✓
Perennial sowthistle	*Sonchus arvensis*	✓	–
Plumeless thistle	*Carduus acanthoides*	✓	✓
Purple loosestrife	*Lythrum salicaria*	✓	UK
Quackgrass	*Elytrigia repens*	✓	–
Russian knapweed	*Acroptilon repens*	✓	✓
Russian olive	*Elaeagnus angustifolia*	✓	–
Salt cedar	*Tamarix chinensis, T. parviflora, and T. ramosissima*	✓	✓
Scotch thistle	*Onopordum acanthium*	✓	✓
Skeletonleaf bursage	*Ambrosia tomentosa*	✓	UK
Spotted knapweed	*Centaurea maculosa*	✓	✓
Yellow toadflax	*Linaria vulgaris*	✓	✓

SOURCES:
[1] Nomenclature follows Wyoming Weed and Pest Council 2012
[2] Bureau of Land Management 2008a
NOTES:
✓ = Indicates status as a state-listed noxious weed species or the presence of a state-listed species in a field office
UK = No populations of the species currently known in a field office
– = Field office has not surveyed for the species or the species was not mentioned in the corresponding management document

TABLE J-3
DESIGNATED NOXIOUS WEEDS IN THE STATE OF COLORADO

Common Name	Scientific Name	Common Name	Scientific Name
Absinth wormwood	*Artemisia absinthium*	Jointed goatgrass[1]	*Aegilops cylindrica*
African rue	*Peganum harmala*	Leafy spurge[1]	*Euphorbia esula*
Black henbane[1]	*Hyoscyamus niger*	Mayweed chamomile	*Anthemis cotula*
Bohemian knotweed	*Polygonum x bohemicum*	Meadow knapweed	*Centaurea pratensis*
Bouncingbet	*Saponaria officinalis*	Mediterranean sage	*Salvia aethiopis*
Bulbous bluegrass	*Poa bulbosa*	Medusahead	*Taeniatherum caput-medusae*
Bull thistle[1]	*Cirsium vulgare*	Moth mullein	*Verbascum blattaria*
Camelthorn	*Alhagi pseudalhagi*	Musk thistle[1]	*Carduus nutans*
Canada thistle[1]	*Cirsium arvense*	Myrtle spurge	*Euphorbia myrsinites*
Cheatgrass/Downy brome	*Bromus tectorum*	Orange hawkweed	*Hieracium aurantiacum*
Chicory[1]	*Cichorium intybus*	Oxeye daisy[1]	*Chrysanthemum leucanthemum*
Chinese clematis	*Clematis orientalis*	Perennial pepperweed[1]	*Lepidium latifolium*
Common burdock[1]	*Arctium minus*	Perennial sowthistle	*Sonchus arvensis*
Common crupina	*Crupina vulgaris*	Plumeless thistle	*Carduus acanthoides*
Common mullein	*Verbascum thapsus*	Poison hemlock	*Conium maculatum*
Common St. Johnswort	*Hypericum perforatum*	Puncturevine	*Tribulus terrestris*
Common tansy	*Tanacetum vulgare*	Purple loosestrife[1]	*Lythrum salicaria*
Common teasel	*Dipsacus fullonum*	Quackgrass	*Elytrigia repens*
Corn chamomile	*Anthemis arvensis*	Redstem filaree	*Erodium cicutarium*
Cutleaf teasel	*Dipsacus laciniatus*	Rush skeletonweed	*Chondrilla juncea*
Cypress spurge	*Euphorbia cyparissias*	Russian knapweed[1]	*Acroptilon repens*
Dalmatian toadflax- broad leaved[1]	*Linaria dalmatica*	Russian-olive	*Elaeagnus angustifolia*
Dalmatian toadflax-narrow leaved	*Linaria genistifolia*	Salt cedar[1]	*Tamarix chinensis, T. parviflora, and T. ramosissima*
Dame's rocket	*Hesperis matronalis*	Scentless chamomile	*Matricaria perforata*
Diffuse knapweed[1]	*Centaurea diffusa*	Scotch thistle[1]	*Onopordum acanthium*
Dyer's woad	*Isatis tinctoria*	Spotted knapweed[1]	*Centaurea maculosa*
Elongated mustard	*Brassica elongata*	Spurred anoda	*Anoda cristata*
Eurasian watermilfoil	*Myriophyllum spicatum*	Squarrose knapweed	*Centaurea virgata*
Field bindweed	*Convolvulus arvensis*	Sulfur cinquefoil	*Potentilla recta*
Giant knotweed	*Polygonum sachalinense*	Tansy ragwort	*Senecio jacobaea*
Giant reed	*Arundo donax*	Velvetleaf	*Abutilon theophrasti*
Giant salvinia	*Salvinia molesta*	Venice mallow	*Hibiscus trionum*
Halogeton	*Halogeton glomeratus*	Wild caraway	*Carum carvi*
Hoary cress[1]	*Cardaria draba*	Wild proso millet	*Panicum miliaceum*
Houndstongue[1]	*Cynoglossum officinale*	Yellow nutsedge	*Cyperus esculentus*
Hydrilla	*Hydrilla verticillata*	Yellow starthistle[1]	*Centaurea solstitialis*
Japanese knotweed	*Polygonum cuspidatum*	Yellow toadflax	*Linaria vulgaris*
Johnsongrass	*Sorghum halepense*		

SOURCE: Nomenclature follows Colorado Department of Agriculture 2012
NOTE:[1]Indicates a species known to occur in the Bureau of Land Management Grand Junction Field Office (Bureau of Land Management 2012a)

TABLE J-4
STATE- AND COUNTY-LISTED NOXIOUS WEEDS IN UTAH FOR BUREAU OF LAND MANAGEMENT LANDS IN THE PROJECT AREA

Common Name[1]	Scientific Name	Vernal Field Office Occurrence[2]	Moab Field Office Occurrence[3]	Price Field Office Occurrence[4]	Richfield Field Office Occurrence[5]	Fillmore Field Office Occurrence[6]	Salt Lake Field Office Occurrence[7]
Utah State-Listed Class A Weeds (Early Detection Rapid response)							
Black henbane	*Hyoscyamus niger*	✓	✓	✓	UK	–	–
Diffuse knapweed	*Centaurea diffusa*	✓	✓	–	✓	✓	✓
Johnsongrass	*Sorghum halepense*	UK	✓	–	✓	–	✓
Leafy spurge	*Euphorbia esula*	✓	–	–	UK	–	✓
Medusahead	*Taeniatherum caput-medusae*	UK	–	–	UK	–	–
Oxeye daisy	*Chrysanthemum leucanthemum*	–	–	–	–	–	–
Purple loosestrife	*Lythrum salicaria*	✓	✓	✓	UK	✓	✓
Spotted knapweed	*Centaurea maculosa*	✓	✓	✓	UK	✓	✓
Squarrose knapweed	*Centaurea virgata*	UK	✓	–	X	✓	✓
St. Johnswort	*Hypericum perforatum*	–	–	–	UK	–	–
Sulfur cinquefoil	*Potentilla recta*	–	–	–	–	–	–
Yellow starthistle	*Centaurea solstitialis*	UK	–	–	UK	–	✓
Yellow toadflax	*Linaria vulgaris*	✓	✓	–	UK	–	–
Utah State-Listed Class B Weeds (Control)							
Bermudagrass	*Cynodon dactylon*	UK	✓	–	UK	–	✓
Dalmatian toadflax	*Linaria dalmatica*	UK	✓	-	UK	–	–
Dyer's woad	*Isatis tinctoria*	✓	✓	–	UK	✓	✓
Hoary cress	*Cardaria draba*	✓	✓	✓	✓	✓	✓
Musk thistle	*Carduus nutans*	✓	✓	✓	✓	✓	✓
Poison hemlock	*Conium maculatum*	UK	✓	–	–	–	–
Perennial pepperweed	*Lepidium latifolium*	✓	✓	✓	✓	–	✓
Russian knapweed	*Acroptilon repens*	✓	✓	✓	✓	–	✓
Scotch thistle	*Onopordum acanthium*	✓	✓	✓	✓	–	✓
Utah State-Listed Class C Weeds (Containment)							
Canada thistle	*Cirsium arvense*	✓	✓	✓	✓	✓	✓
Field bindweed	*Convolvulus arvensis*	✓	✓	✓	✓	✓	✓
Houndstongue	*Cynoglossum officinale*	✓	✓	✓	–	–	–

TABLE J-4
STATE- AND COUNTY-LISTED NOXIOUS WEEDS IN UTAH FOR BUREAU OF LAND MANAGEMENT LANDS IN THE PROJECT AREA

Common Name[1]	**Scientific Name**	**Vernal Field Office Occurrence**[2]	**Moab Field Office Occurrence**[3]	**Price Field Office Occurrence**[4]	**Richfield Field Office Occurrence**[5]	**Fillmore Field Office Occurrence**[6]	**Salt Lake Field Office Occurrence**[7]
Salt cedar	*Tamarix chinensis, T. parviflora, and T. ramosissima*	✓	✓	✓	✓	–	–
Quackgrass	*Elytrigia repens*	✓	✓	–	✓	✓	✓
County-listed Weeds							
Blue flowering lettuce (Juab County)	*Lactuca tatarica*	–	–	–	–	✓	–
Common teasel (Uintah County)	*Dipsacus fullonum*	–	–	–	–	–	–
Common reed (Washington County)	*Phragmites australis*	–	✓	–	–	–	–
Puncturevine (Uintah County)	*Tribulus terrestris*	–	–	–	–	–	–
Russian-olive (Carbon, Duchesne, Grand, and Uintah counties)	*Elaeagnus angustifolia*	✓	✓	✓	UK	–	–
Water hemlock (Duchesne County)	*Cicuta maculata*	–	–	–	–	–	–

SOURCES:

[1] Nomenclature follows Utah Department of Agriculture and Food 2009, 2010.

[2] Bureau of Land Management (BLM) 2008b

[3] BLM 2008c

[4] BLM 2008d

[5] BLM 2008e

[6] No inventories of noxious weeds have occurred in the particular BLM lands that would be crossed by the Project in this field office. Information for the BLM Fillmore Field Office was acquired from the U.S. Department of Agriculture PLANTS database using a query of Utah state-listed noxious weeds that occur in Juab County, Utah (Natural Resource Conservation Service [NRCS] 2013a) For Juab County-listed noxious weeds, the presence of blue flowering lettuce was confirmed by the BLM Fillmore Field Office (Probert 2013).

[7] No inventories of noxious weeds have occurred in the particular BLM lands that would be crossed by the Project in this field office. Information for the BLM Salt Lake Field Office was acquired from the U.S. Department of Agriculture PLANTS database using a query of Utah state-listed noxious weeds that occur in Utah County, Utah (NRCS 2013b), as the only BLM-administered public lands potentially crossed by Project alternative routes in the Salt Lake Field Office occur in this county (Watson 2013).

NOTES:

✓ = Indicates status as a state-listed noxious weed species or the presence of a state- or county-listed species in a field office.

UK = No populations of the species are currently known within the field office.

– = Field office has not surveyed for the species or the species was not mentioned in the corresponding management document

TABLE J-5
STATE- AND COUNTY-LISTED NOXIOUS WEEDS IN UTAH FOR U.S. FOREST SERVICE LANDS IN THE PROJECT AREA

Common Name[1]	Scientific Name	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest
Utah State-Listed Class A Weeds (Early Detection Rapid response)				
Black henbane	*Hyoscyamus niger*	✓		
Diffuse knapweed	*Centaurea diffusa*		✓	✓
Johnsongrass	*Sorghum halepense*			✓
Leafy spurge	*Euphorbia esula*	✓		✓
Medusahead	*Taeniatherum caput-medusae*			
Oxeye daisy	*Chrysanthemum leucanthemum*	✓		✓
Purple loosestrife	*Lythrum salicaria*			
Spotted knapweed	*Centaurea maculosa*	✓		✓
Squarrose knapweed	*Centaurea virgata*		✓	✓
St. Johnswort	*Hypericum perforatum*	✓		
Sulfur cinquefoil	*Potentilla recta*			✓
Yellow starthistle	*Centaurea solstitialis*			✓
Yellow toadflax	*Linaria vulgaris*	✓	✓	
Utah State-listed Class B Weeds (Control)				
Bermudagrass	*Cynodon dactylon*			
Dalmatian toadflax	*Linaria dalmatica*	✓	✓	✓
Dyer's woad	*Isatis tinctoria*	✓	✓	✓
Hoary cress	*Cardaria draba*	✓	✓	✓
Musk thistle	*Carduus nutans*	✓	✓	✓
Poison hemlock	*Conium maculatum*		✓	
Perennial pepperweed	*Lepidium latifolium*	✓		✓
Russian knapweed	*Acroptilon repens*	✓	✓	✓
Scotch thistle	*Onopordum acanthium*	✓	✓	✓
Utah State-listed Class C Weeds (Containment)				
Canada thistle	*Cirsium arvense*	✓	✓	✓
Field bindweed	*Convolvulus arvensis*			✓
Houndstongue	*Cynoglossum officinale*	✓	✓	✓
Salt cedar	*Tamarix chinensis, T. parviflora,* and *T. ramosissima*		✓	✓
Quackgrass	*Elytrigia repens*			✓
County-listed Weeds				
Blue flowering lettuce (Juab County)	*Lactuca tatarica*			
Common teasel (Uintah County)	*Dipsacus fullonum*			✓
Puncturevine (Uintah County)	*Tribulus terrestris*			✓
Russian-olive (Carbon, Duchesne, Grand, and Uintah counties)	*Elaeagnus angustifolia*	✓		✓
Water hemlock (Duchesne County)	*Cicuta maculata*			

SOURCE: U.S. Forest Service 2013a
NOTES:
[1] Nomenclature follows Utah Department of Agriculture and Food 2009, 2010.
✓ = Indicates status as a state-listed noxious weed species or the presence of a state- or county-listed species in a National Forest.

J.3 Migratory Birds

Tables J-6 and J-7 provide background information on bird species protected under the Migratory Bird Treaty Act (MBTA) that are identified by agencies or conservation organizations as declining or otherwise of conservation and management priorities, and that may be present in the Project area. While all species listed under the MBTA are protected equally by that law, memoranda of understanding between federal land-management agencies, including the BLM and USFS and the FWS have included commitments to focus attention towards bird species of concern in the decision-making process. These tables are intended to identify those species, to inform ongoing planning efforts for the Project-related reclamation actions, vegetation management, and other habitat-altering activities that may be modified to achieve migratory bird conservation management priorities.

Table J-6 identifies bird species that, in addition to protections provided to all birds listed under the MBTA, are specifically protected or identified for conservation through the following efforts.

- Endangered Species Act
- Bald and Golden Eagle Protection Act
- Birds of Conservation Concern identified by the FWS
- BLM Sensitive species
- USFS Sensitive species
- USFS Management Indicator Species (MIS)
- North American Waterfowl Management Plan (NAWMP)
- North American Waterbird Conservation Plan (NAWCP)
- U.S. Shorebird Conservation Plan (USSCP)
- Game Birds Below Desired Condition (GBBDC)
- Wyoming Species of Greatest Conservation Need (SGCN)
- Colorado state-listed as endangered (SE), threatened (ST), or a species of concern (SC)
- Utah species of concern (SPC)
- Partners in Flight watchlist species
- State of the Birds 2014 watchlist and declining species

For each species listed in Table J-6, Table J-7 provides a summary of natural history information and identified threats. This information is intended to indicate when each species may be present in the Project area, seasonal activities in the Project area (e.g., nesting, wintering), and whether the Project may contribute to existing, identified threats that may be contributing to population declines.

J.4 Special Status Species Lists

Special status species include species listed as threatened, endangered, or candidates for listing under the Endangered Species Act (ESA); species listed as sensitive by the USFS and BLM; and species assigned a special status by the Wyoming, Colorado, or Utah. The species analyzed were compiled from lists of threatened, endangered, and candidate species from the FWS (county level), BLM sensitive species (state level), USFS sensitive species (forest level), or species protected by the States of Wyoming, Colorado, and/or Utah.

J.4.1 Federal Threatened, Endangered, and Candidate Species

- Wyoming – Carbon and Sweetwater counties (FWS 2014a)
- Colorado – Garfield, Mesa, Moffat, Rio Blanco, and Routt counties (FWS 2014b)
- Utah – Carbon, Duchesne, Emery, Grand, Juab, Sanpete, Uintah, Utah, and Wasatch counties (FWS 2014c)

J.4.2 State Protected Species

- Wyoming
  - List of animals – Wyoming Game and Fish Nongame Species of Special Concern. January 2005 (Wyoming Game and Fish Department [WGFD] 2005a, b)
  - List of birds – Wyoming Game & Fish Nongame Species of Special Concern. January 2005 (WGFD 2005a)
- Colorado
  - List of animals – Colorado Threatened and Endangered List. July 7, 2010 (Colorado Parks and Wildlife [CPW] 2010)
- Utah
  - List of animals – Utah's State Listed Species by County. March 29, 2011 (Utah Division of Wildlife Resources [UDWR] 2011a)

J.4.3 Bureau of Land Management Sensitive Species

- Wyoming – BLM Wyoming Sensitive Species Policy and List by Field Station (Rawlins). March 31, 2010 (BLM 2010a)
- Colorado – Colorado BLM State Director's Sensitive Species List by Field Station (Little Snake, White River, Grand Junction). November 20, 2009 (BLM 2009)
- Utah
  - List of animals – Utah BLM Sensitive Fish and Wildlife Species List. December 20, 2011 (UDWR 2011b)
  - List of plants – Interim BLM Sensitive Plant List, from State Office. February 1, 2011 (BLM 2011a)

J.4.4 U.S. Forest Service Sensitive Species

- Region 4 – Intermountain Region 4 Threatened, Endangered, Proposed, and Sensitive Species; Known and Suspected Distribution by Forest (USFS 2013b)

J.4.5 U.S. Forest Service Management Indicator Species

- Ashley National Forest – Ashley National Forest Land and Resource Management Plan (LRMP) as amended (USFS 1986a)
- Manti-La Sal National Forest – Manti-La Sal National Forest LRMP as amended (USFS 1986b)
- Uinta National Forest – LRMP for the Uinta National Forest as amended (USFS 2003)

J.5 Special Status Species Tables

Special status plant species likely to occur in or near the Project area and carried forward for detailed analysis in the EIS are included on Table J-8. Special status plants that were not carried forward for analysis are listed on Table J-9. Special status wildlife species likely to occur in or near the Project area and carried forward for detailed analysis in the EIS are included on Table J-10. Special status wildlife species not carried forward for analysis are listed on Table J-11. These tables include a brief summary of the data available and the rationale used to determine which species were carried forward for detailed analysis.

TABLE J-6
STATUS OF MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

	Birds of Conservation Concern										State of the Birds 2014			
Common Name ***Scientific Name***	**Northern Rockies BCR 10**	**Southern Rockies and Colorado Plateau BCR 16**	**Great Basin BCR 9**	**U.S. Fish and Wildlife Service Region 6**	**National**	**Partners In Flight Watchlist**	**Bureau of Land Management Sensitive (by state)**	**U.S. Forest Service Sensitive or Management Indicator Species**	**Other**	**State-listed**	**U.S. Continental Watchlist (Red)**	**U.S. Continental Watchlist (Yellow)**	**Common Birds in Steep Decline**	**Distinct Populations of Conservation Concern**
American bittern *Botaurus lentiginosus*		●		●				●		WY-SGCN 2				
American three-toed woodpecker *Picoides dorsalis*							UT	Ashley-SS Manti-SS Uinta-SS/MIS		WY-SGCN 2 UT-SPC				
American white pelican *Pelecanus erythrorhynchos*							CO, UT		NAWCP	UT-SPC				
American wigeon *Anas americana*									GBBDC, NAWMP				●	
Arctic tern *Sterna paradisaea*									NAWCP					
Ash-throated flycatcher *Myiarchus cinerascens*										WY-SGCN 2				
Baird's sparrow *Ammodramus bairdii*	■	■	■	●	●	●	WY					●		
Bald eagle *Haliaeetus leucocephalus*	●	●	●	●	●		WY, CO, UT	●	BGEPA	WY-SGCN 1 CO-SC UT-SPC				
Band-tailed pigeon *Patagioenas fasciata*						●			GBBDC			●		
Bank swallow *Riparia riparia*													●	
Barrow's goldeneye *Bucephala islandica*										WY-SGCN 2				
Bewick's wren *Thryomanes bewickii bewickii*		■		●	●									
Black rosy-finch *Leucosticte atrata*	●	●	●	●	●	●				WY-SGCN 2		●		
Black tern *Chlidonias niger*								●	NAWCP	WY–SGCN 2			●	
Black-crowned night-heron *Nycticorax nycticorax*					●				NAWCP	WY-SGCN 2				
Black-headed gull *Chroicocephalus ridibundus*									NAWCP					
Bobolink *Dolichonyx oryzivorus*							UT			WY-SGCN 2 UT-SPC		●		
Bonaparte's gull *Chroicocephalus philadelphia*									NAWCP					
Boreal owl *Aegolius funereus*								●Ashley-SS		WY-SGCN 2				
Brewer's blackbird *Euphagus cyanocephalus*													●	
Brewer's sparrow *Spizella breweri*	●	●	●		●	●	WY, CO	●		WY-SGCN 2				
Brown-capped rosy-finch *Leucosticte australis*		●		●	●	●				WY-SGCN 2	●			

TABLE J-6
STATUS OF MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

	Birds of Conservation Concern										**State of the Birds 2014**			
Common Name ***Scientific Name***	**Northern Rockies BCR 10**	**Southern Rockies and Colorado Plateau BCR 16**	**Great Basin BCR 9**	**U.S. Fish and Wildlife Service Region 6**	**National**	**Partners In Flight Watchlist**	**Bureau of Land Management Sensitive (by state)**	**U.S. Forest Service Sensitive or Management Indicator Species**	**Other**	**State-listed**	**U.S. Continental Watchlist (Red)**	**U.S. Continental Watchlist (Yellow)**	**Common Birds in Steep Decline**	**Distinct Populations of Conservation Concern**
Buff-breasted sandpiper *Calidris subruficollis*				●	●				USSCP			●		
Burrowing owl *Athene cunicularia*		●		●			WY, CO, UT	●		WY-SGCN 1 CO-ST UT-SPC				
Bushtit *Psaltriparus minimus*										WY-SGCN 2				
California gull *Larus californicus*									NAWCP					
Calliope hummingbird *Stellula calliope*	●		●		●	●								
Canvasback *Aythya valisineria*									NAWMP	WY-SGCN 2				
Caspian tern *Sterna caspia*										WY-SGCN 2				
Cassin's finch *Carpodacus cassinii*	●	●		●								●		
Chestnut-collared longspur *Calcarius ornatus*		●		●				●		WY-SGCN 2		●		
Cinnamon teal *Anas cyanoptera*									NAWMP				●	
Clark’s grebe *Aechmophorus clarkii*										WY-SGCN 2		●		
Common grackle *Quiscalus quiscula*													●	
Common goldeneye *Bucephala clangula*									NAWMP					
Common loon *Gavia immer*										WY-SGCN 1				
Common nighthawk *Chordeiles minor*													●	
Dickcissel *Spiza americana*					●	●				WY-SGCN 2				
Dunlin *Calidris alpina*					●				USSCP			●		
Eared grebe *Podiceps nigricollis*			●						NAWCP					
Evening grosbeak *Coccothraustes vespertinus*												●		
Ferruginous hawk *Buteo regalis*	●	●	●	●			WY, CO, UT	●		WY-SGCN 1 CO-SC UT-SPC				
Flammulated owl *Plisoscops flammeolus*	●	●	●	●	●	●	WY, CO, UT	●				●		
Forster’s tern *Sterna forsteri*									NAWCP	WY-SGCN 2				

TABLE J-6
STATUS OF MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

	Birds of Conservation Concern										State of the Birds 2014			
Common Name ***Scientific Name***	**Northern Rockies BCR 10**	**Southern Rockies and Colorado Plateau BCR 16**	**Great Basin BCR 9**	**U.S. Fish and Wildlife Service Region 6**	**National**	**Partners In Flight Watchlist**	**Bureau of Land Management Sensitive (by state)**	**U.S. Forest Service Sensitive or Management Indicator Species**	**Other**	**State-listed**	**U.S. Continental Watchlist (Red)**	**U.S. Continental Watchlist (Yellow)**	**Common Birds in Steep Decline**	**Distinct Populations of Conservation Concern**
Franklin's gull *Larus pipixcan*									NAWCP	WY-SGCN 2			●	
Golden eagle *Aquila chrysaetos*		●	●	●				Ashley-MIS Manti-MIS	BGEPA					
Grasshopper sparrow *Ammodramus savannarum*		●		●			UT	●		WY-SGCN 2 UT-SPC			●	
Gray vireo *Vireo vicinior*		●		●	●	●						●		
Greater sandhill crane *Grus canadensis tabida*										WY-SGCN 3 UT-SC				
Green-tailed towhee *Pipilo chlorurus*			●											
Harris's sparrow *Zonotrichia querula*					●	●						●		
Herring gull *Larus argentatus*													●	
Horned grebe *Podiceps auritus*				●										
Horned lark *Eremophila alpestris*					●								●	
Hudsonian godwit *Limosa haemastica*				●	●				USSCP			●		
Juniper titmouse *Baeolophus ridgwayi*		●								WY-SGCN 2				
Lark bunting *Calamospiza melanocorys*										WY-SGCN 2			●	
Lesser scaup *Aythya affinis*									GBBDC, NAWMP	WY-SGCN 2				
Lesser yellowlegs *Tringa flavipes*					●				USSCP			●		
Lewis's woodpecker *Melanerpes lewis*	●	●	●	●	●	●	UT	●		WY-SGCN 2 UT-SPC		●		
Lincoln's sparrow *Melospiza lincolnii*								Ashley-MIS						
Loggerhead shrike *Lanius ludovicianus*	●		●	●	●		WY	●					●	
Long-billed curlew *Numenius americanus*	●	●	●	●	●		WY, CO, UT	●	USSCP	WY-SGCN 2 CO-SC UT-SPC		●		
Mallard *Anas platyrhynchos*									GBBDC, NAWMP					
Marbled godwit *Limosa fedoa*			●	●	●				USSCP			●		
Mccown's longspur *Rhynchophanes mccownii*	●			●	●	●		●		WY-SGCN 2		●		

TABLE J-6
STATUS OF MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

	Birds of Conservation Concern										State of the Birds 2014			
Common Name ***Scientific Name***	**Northern Rockies BCR 10**	**Southern Rockies and Colorado Plateau BCR 16**	**Great Basin BCR 9**	**U.S. Fish and Wildlife Service Region 6**	**National**	**Partners In Flight Watchlist**	**Bureau of Land Management Sensitive (by state)**	**U.S. Forest Service Sensitive or Management Indicator Species**	**Other**	**State-listed**	**U.S. Continental Watchlist (Red)**	**U.S. Continental Watchlist (Yellow)**	**Common Birds in Steep Decline**	**Distinct Populations of Conservation Concern**
Merlin *Falco columbarius*										WY-SGCN 3		■		
Mexican spotted owl *Strix occidentalis lucida*					●	●			ESA-T	CO-FT/ST UT-S/ESA		●		
Mountain plover *Charadrius montanus*		●		●	●		WY, CO, UT	●	USSCP	WY-SGCN 1 CO-SC UT-SPC	●			
Northern goshawk *Accipiter gentilis*							WY, CO, UT	●SS/MIS (X3)		WY-SGCN 1 UT-CS				
Northern harrier *Circus cyaneus*								●						
Northern pintail *Anas acuta*									GBBDC, NAWMP	WY-SGCN 2			●	
Northern pygmy-owl *Glaucidium gnoma*										WY-SGCN 2				
Olive-sided flycatcher *Contopus cooperi*	●				●	●		●				●		
Pectoral sandpiper *Calidris melanotos*									USSCP			●		
Peregrine falcon *Falco peregrinus*	●	●	●	●b	●		WY, CO	●SS (X3)		WY-SGCN 2 CO-SC				
Pine siskin *Spinus pinus*													●	
Pinyon jay *Gymnorhinuscyanocephalus*		●	●	●	●	●						●		
Piping plover[1] *Charadrius melodus*									ESA-T[1]	CO-FT/ST[1]	●[1]			
Prairie falcon *Falco mexicanus*		●		●										
Purple martin *Progne subis*								●						
Pygmy nuthatch *Sitta pygmaea*										WY-SGCN 2				
Redhead *Aythya americana*									GBBDC, NAWMP	WY-SGCN 2				
Red-naped sapsucker *Sphyrapicus nuchalis*								Ashley- MIS						
Ruddy turnstone *Arenaria interpres*									USSCP					
Rufous hummingbird *Selasphorus rufus*					●	●						●		
Rusty blackbird *Euphagus carolinus*					●	●							●	
Sagebrush sparrow *Artemisiospiza nevadensis*	●		●	●			WY	●		WY-SGCN 2				

TABLE J-6
STATUS OF MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Birds of Conservation Concern**					**Partners In Flight Watchlist**	**Bureau of Land Management Sensitive (by state)**	**U.S. Forest Service Sensitive or Management Indicator Species**	**Other**	**State-listed**	**State of the Birds 2014**			
	Northern Rockies BCR 10	**Southern Rockies and Colorado Plateau BCR 16**	**Great Basin BCR 9**	**U.S. Fish and Wildlife Service Region 6**	**National**						**U.S. Continental Watchlist (Red)**	**U.S. Continental Watchlist (Yellow)**	**Common Birds in Steep Decline**	**Distinct Populations of Conservation Concern**
Sage thrasher *Oreoscoptes montanus*	●		●	●			WY			WY-SGCN 2				
Semipalmated sandpiper *Calidris pusilla*					●				USSCP			●		
Short-billed dowitcher *Limnodromus griseus*				●nb	●				USSCP			●		
Short-eared owl *Asio flammeus*				●	●	●	UT	●		WY- SGCN 2 UT-SPC			●	
Snow bunting *Plectrophenax nivalis*													●	
Snowy egret *Egretta thula*									NAWCP	WY-SGCN 2				
Snowy plover^{2} *Charadrius alexandrinus*		●^{2}	●^{2}	●c^{2}	●^{2}		CO^{2} UT^{2}		USSCP	CO-SC^{2}	●			
Solitary sandpiper *Tringa solitaria*					●									
Song sparrow *Melospiza melodia*								Ashley-MIS						
Swainson's hawk *Buteo swainsoni*	●				●	●				WY-SGCN 2				
Thayer's gull *Larus thayeri*									NAWCP					
Upland sandpiper *Bartramia longicauda*	●			●	●					WY-SGCN 2				
Veery *Catharus fuscescens*		●												
Virginia rail *Rallus limicola*										WY-SGCN 2				
Virginia's warbler *Oreothlypis virginiae*			●		●	●						●		
Warbling vireo *Vireo gilvus*								Ashley-MIS						
Western scrub-jay *Aphelocoma californica*										WY-SGCN 2				
Whimbrel (North American population) *Numenius phaeopus*					●				USSCP			●		
White-faced ibis *Plegadis chihi*							WY, CO			WY-SGCN 2				
White-throated swift *Aeronautes saxatalis*						●				CO-FE/SE				
White-winged scoter *Melanitta fusca*									NAWMP			■		
Willet *Tringa semipalmata*									USSCP			●		

TABLE J-6
STATUS OF MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Birds of Conservation Concern**					**Partners In Flight Watchlist**	**Bureau of Land Management Sensitive (by state)**	**U.S. Forest Service Sensitive or Management Indicator Species**	**Other**	**State-listed**	**State of the Birds 2014**			
	Northern Rockies BCR 10	**Southern Rockies and Colorado Plateau BCR 16**	**Great Basin BCR 9**	**U.S. Fish and Wildlife Service Region 6**	**National**						**U.S. Continental Watchlist (Red)**	**U.S. Continental Watchlist (Yellow)**	**Common Birds in Steep Decline**	**Distinct Populations of Conservation Concern**
Williamson's sapsucker *Sphyrapicus thyroideus*	●		●											
Willow flycatcher *Empidonax traillii*	●	●	●	●c	●	●				WY-SGCN 3				
Wilson's warbler *Cardellina pusilla*													●	
Yellow-billed cuckoo *Coccyzus americanus*	●	●	●		●[3]		WY, CO, UT[3]	●SS (X3)[3]	ESA-T[3]	WY-SGCN 3 CO-SC UT-S-ESA			●	●[3]
Yellow-crowned night heron *Nyctanassa violacea*									NAWCP					

NOTES:

[1] Refers to the ESA-listed Northern Great Plains Distinct Population Segment

[2] Refers to the Interior population, which is not ESA-listed

[3] Refers to the ESA-listed Western United States Distinct Population Segment

BGEPA = Bald and Golden Eagle Protection Act
BCR = Bird Conservation Region
CO = Colorado
CO-FE/SE = Federally endangered, state endangered
CO-FT/ST = Colorado Federally Threatened/State Threatened
CO-SC = Colorado Species of Concern
ESA = Endangered Species Act
ESA-T = Threatened
GBBDC = Game Birds Below Desired Condition
MIS = Management Indicator Species
NAWCP = North American Waterfowl Conservation Plan
NAWMP = North American Waterfowl Management Plan
SPC = Species of Concern
SS = Sensitive species
USSCP = United States Shorebird Conservation Plan
UT = Utah
UT-S/ESA = Sensitive as a result of being listed under the Endangered Species Act
WY = Wyoming
WY-SGCN = Species of Greatest Conservation Need

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	Primary Nesting Habitat	Primary Foraging Habitat	Primary Wintering Habitat	Primary Migration Habitat	Nesting Dates	Activity in Project Area	Identified Threats	Breeding Bird Survey Trends[1] (percent population change per year)			
								Western Region	Wyoming	Colorado	Utah
American bittern *Botaurus lentiginosus*	▪ Wetlands: marshes	▪ Wetlands	▪ Wetlands	▪ Wetlands	Early April through August	▪ Nesting	▪ Wetland habitat loss and degradation ▪ Disturbance at nest and roost sites ▪ Water quality	-3.4	-6.1	NA	20.3
American three-toed woodpecker *Picoides dorsalis*	▪ Montane forest, Ponderosa pine: insect-infested snags or dying trees	▪ Montane forest ▪ Ponderosa pine	▪ Irruptive migration	▪ Irruptive migration	Mid-May through late July	▪ Year-round	▪ Habitat loss: timber harvesting of old-growth coniferous forests and removal of snags	4.0	5.1	5.0	14.5
American white pelican *Pelecanus erythrorhynchos*	▪ Water: islands and bays free of mammalian predators	▪ Water	▪ Water	▪ Water	August through mid-September	▪ Migration	▪ Disturbance at nest and roost sites: extremely sensitive ▪ Degradation of habitat: permanent flooding or drainage	4.9	11.0	12.6	7.6
American wigeon *Anas americana*	▪ Wetlands: marshes, freshwater areas with exposed shoreline	▪ Wetlands ▪ Disturbed/developed: manicured lawns	▪ Wetlands	▪ Wetlands ▪ Water	Early May through mid-August	▪ Nesting ▪ Wintering	▪ Wetland habitat loss	1.0	-0.6	6.7	14.5
Arctic tern *Sterna paradisaea*	▪ Arctic tundra ▪ Boreal forest	▪ Water	▪ Water: Antarctic icebergs and pack ice	▪ Water ▪ Wetlands: marshes	Late May through July	▪ Migration: rare inland	▪ Disturbance at nest and roost sites ▪ Over-fishing: sensitive to food availability	NA	NA	NA	NA
Ash-throated flycatcher *Myiarchus cinerascens*	▪ Shrub/shrub steppe ▪ Riparian ▪ Pinyon-juniper	▪ Shrub/shrub steppe ▪ Riparian	▪ Shrub/shrub steppe ▪ Riparian	▪ Shrub/shrub steppe ▪ Riparian	Mid-March through early August	▪ Nesting	▪ Loss and degradation of habitat: clearing, grazing, urbanization	0.8	-4.5	3.7	2.5
Baird's sparrow *Ammodramus bairdii*	▪ Grasslands: shortgrass prairie	▪ Grasslands	▪ Grasslands	▪ Grasslands	Mid-May through mid-August	▪ Nesting	▪ Habitat loss: grassland conversion to cropland and exotic vegetation	NA	20.2	NA	NA
Bald eagle *Haliaeetus leucocephalus*	▪ Riparian: coasts, rivers and large lakes in open areas.	▪ Water: systems with large fish ▪ May scavenge in other vegetation communities	▪ Riparian	▪ Riparian	Late March through mid-September	▪ Nesting ▪ Wintering	▪ Pesticides and other environmental contaminants ▪ Collisions with structures ▪ Habitat degradation: human development ▪ Human persecution: illegal shooting ▪ Disturbance at nest and roost sites	4.2	9.2	16.3	NA
Band-tailed pigeon *Patagioenas fasciata*	▪ Montane forest ▪ Ponderosa pine ▪ Pinyon-juniper	▪ Montane forest ▪ Agriculture	▪ Montane forest	▪ Montane forest	February through October	▪ Nesting: south	▪ Harvest: shooting and trapping	-2.3	NA	-4.5	-1.6
Bank swallow *Riparia riparia*	▪ Water: requires vertical banks, cliffs, and bluffs for nesting colonies	▪ Water	▪ Grasslands ▪ Wetlands	▪ Wetlands	April through August	▪ Nesting	▪ Habitat degradation: elimination of natural flood regimes	-1.7	1.4	3.1	-0.7

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Barrow's goldeneye *Bucephala islandica*	▪ Water: ponds, lakes, and rivers with abundant aquatic vegetation; nests in tree or rock crevice	▪ Water	▪ Water	▪ Water	April through September	▪ Wintering	▪ Degradation of habitat: removal of snags as well as other forestry practices	-0.8	-3.6	NA	NA
Bewick's wren *Thryomanes bewickii bewickii*	▪ Mountain shrub ▪ Riparian	▪ Mountain shrub ▪ Riparian	▪ Short-distance migration	▪ Short-distance migration	Mid-April through August	▪ Year-round	▪ Range expansion of House Wrens due to human-caused habitat changes	-0.6	2.4	3.3	0.8
Black rosy-finch *Leucosticte atrata*	▪ Alpine: above timberline on tundra	▪ Alpine tundra	▪ Altitudinal migration	▪ Altitudinal migration	Mid-June through August	▪ Year-round	▪ Climate change	NA	NA	NA	NA
Black tern *Chlidonias niger*	▪ Freshwater wetlands: tall emergent vegetation	▪ Freshwater wetlands: tall emergent vegetation	▪ Marine habitats	▪ Wetlands: freshwater lakes and rivers.	Mid-May through August	▪ Nesting	▪ Loss and degradation of wetland habitat	-3.8	NA	NA	NA
Black-crowned night-heron *Nycticorax nycticorax*	▪ Wetlands: marshes, swamps, ponds, lakes, and lagoons	▪ Wetlands ▪ Water	▪ Wetlands	▪ Wetlands	January through August	▪ Nesting	▪ Wetland habitat loss and degradation ▪ Water quality: organochloride and heavy metal pollution	-1.8	-8.3	-7.5	-1.1
Black-headed gull *Chroicocephalus ridibundus*	▪ Wetlands: marshes as well as vegetated ponds and lakes	▪ Water	▪ Water	▪ Water	Mid-April through July	▪ Migration	▪ Wetland habitat loss and degradation	NA	NA	NA	NA
Bobolink *Dolichonyx oryzivorus*	▪ Grassland: tall-grass to mixed grass prairie of Midwestern U.S.	▪ Grasslands	▪ Pampas grasslands: South America	▪ Grasslands ▪ Agriculture	Late May through July	▪ Nesting	▪ Disturbance at nest and roost sites: predation, flooding, adverse weather, and human disturbance	-2.9	2.0	NA	NA
Bonaparte's gull *Chroicocephalus philadelphia*	▪ Wetlands: trees adjacent to water	▪ Wetlands ▪ Water	▪ Wetland ▪ Water	▪ Wetlands ▪ Water	June through July	▪ Migration	▪ Wetland habitat loss and degradation	NA	NA	NA	NA
Boreal owl *Aegolius funereus*	▪ Montane forest	▪ Montane forest	▪ Irruptive migration	▪ Irruptive migration	Late March through July	▪ Year-round	▪ Habitat loss: timber harvest of mature stands in forests	NA	NA	NA	NA
Brewer's blackbird *Euphagus cyanocephalus*	▪ Agricultural fields ▪ Developed/disturbed areas: parks, lawns, and golf courses	▪ Agricultural fields ▪ Developed/disturbed areas: parks, lawns, and golf courses	▪ Agricultural fields ▪ Developed/Disturbed areas: parks, lawns, and golf courses	▪ Agricultural fields ▪ Developed/disturbed areas: parks, lawns, and golf courses	Early April through mid-July	▪ Nesting: north ▪ Wintering: south	▪ Inadvertent pest control practices due to its association with pest species ▪ Disturbance at nest and roost sites: plowing of agricultural fields	-2.1	-1.7	-2.4	-6.6
Brewer's sparrow *Spizella breweri*	▪ Sagebrush ▪ Shrub/shrub steppe	▪ Sagebrush ▪ Shrub/shrub steppe	▪ Sagebrush ▪ Desert scrub	▪ Sagebrush ▪ Shrub/shrub steppe	Mid-May through early August	▪ Nesting	▪ Habitat loss: conversion of native shrublands to agriculture	-0.6	-0.4	-2.6	-1.3
Brown-capped rosy-finch *Leucosticte australis*	▪ Alpine	▪ Alpine	▪ Altitudinal migration	▪ Altitudinal migration	Mid-June through early September	▪ Year-round	▪ Climate change	NA	NA	NA	NA

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Buff-breasted sandpiper *Calidris subruficollis*	▪ Arctic tundra	▪ While migrating: grasslands, wetlands, and developed/ disturbed	▪ Pampas grasslands: South America	▪ Grasslands ▪ Wetlands ▪ Developed/disturbed: golf courses, cemeteries, airports, and lawns.	Early June through August	▪ Migration	▪ Habitat degradation and loss. ▪ Disturbance at nest and roost sites ▪ Pesticides and other environmental contaminants	NA	NA	NA	NA
Burrowing owl *Athene cunicularia*	▪ Agriculture ▪ Grasslands: often associated with prairie dog colonies	▪ Agriculture ▪ Grasslands	▪ Agriculture ▪ Grasslands	▪ Agriculture ▪ Grasslands	Mid-March through August	▪ Nesting	▪ Pesticides and other environmental contaminants: carbofuran ▪ Habitat loss: prairie dog towns	-0.8	0.2	-0.5	-0.5
Bushtit *Psaltriparus minimus*	▪ Pinyon-juniper ▪ Riparian: thickets ▪ Shrub/shrub steppe	▪ Pinyon-juniper ▪ Riparian: thickets ▪ Shrub/shrub steppe	▪ Non-migratory	▪ Non-migratory	Early March through August	▪ Year-round	▪ Limited Wyoming range ▪ No known human activity impacts ▪ Predation primary cause of nest failure; weather also may have an effect in particularly rainy winters	-0.8	NA	1.0	2.6
California gull *Larus californicus*	▪ Water: islands in lakes and rivers	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	Early May through July	▪ Migration	▪ Ingestion of plastics ▪ Degradation of habitat ▪ Disturbance at nest sites	-1.5	-7.1	5.2	4.6
Calliope hummingbird *Stellula calliope*	▪ Montane Forests	▪ Montane forests ▪ Mountain shrub	▪ Arid thorn-forests	▪ Riparian ▪ Grasslands: meadows	May through mid-August	▪ Nesting	▪ Habitat degradation. ▪ Collisions with vehicles and windows	-0.2	-1.3	NA	NA
Canvasback *Aythya valisineria*	▪ Wetlands: marsh and ponds ▪ Water: open, freshwater lakes and rivers	▪ Wetlands ▪ Water	▪ Wetlands ▪ Water	▪ Wetlands ▪ Water	Mid-April through September	▪ Nesting: north ▪ Wintering: south	▪ Pesticides and other environmental contaminant ▪ Ingestion of plastics and lead ▪ Wetland habitat loss and degradation	-0.9	4.0	NA	NA
Caspian tern *Sterna caspia*	▪ Water: flat, sand or gravel beaches.	▪ Wetlands ▪ Water	▪ Wetlands ▪ Water	▪ Wetlands ▪ Water	Mid-May through August	▪ Migration ▪ Nesting: potential	▪ Pesticides and other environmental contaminants ▪ Disturbance at nest sites: very sensitive	NA	NA	NA	NA
Cassin's finch *Carpodacus cassinii*	▪ Montane Forest: open coniferous forest at higher elevations	▪ Montane forest	▪ Altitudinal migration	▪ Altitudinal migration	Mid-May through mid-July	▪ Year-round	▪ Habitat degradation	-2.8	-2.2	-0.6	-1.5
Chestnut-collared longspur *Calcarius ornatus*	▪ Grasslands: shortgrass prairie	▪ Grasslands: shortgrass prairie	▪ Grasslands: shortgrass prairie.	▪ Grasslands: shortgrass prairie	Early May through early August	▪ Migration ▪ Nesting: potential in north	▪ Pesticides and other contaminants: seeds treated with fungicides ▪ Habitat loss: conversion of grasslands to cropland ▪ Disturbance at nest and roost sites	NA	-9.4	-2.7	NA
Cinnamon teal *Anas cyanoptera*	▪ Wetlands: alkaline	▪ Wetlands	▪ Wetlands	▪ Wetlands	Late March through mid-September	▪ Nesting	▪ Water quality: selenium and carbofuran pollution ▪ Wetland habitat loss	-3.3	-2.9	-1.7	1.3

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name ***Scientific Name***	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Clark's grebe *Aechmophorus clarkii*	▪ Water: lakes ▪ Wetlands: marshes	▪ Water	▪ Water ▪ Wetlands	▪ Water	Early June through August	▪ Nesting	▪ Oil spills ▪ Mortality from gill nets ▪ Disturbance at nest sites	-2.3	2.5	2.4	9.5
Common grackle *Quiscalus quiscula*	▪ Developed/disturbed	▪ Developed/disturbed	▪ Developed/disturbed	▪ Developed/disturbed	March through early July	▪ Nesting	▪ One of the most abundant species in North America, although a common bird in steep decline	-0.7	-0.1	2.4	-2.3
Common goldeneye *Bucephala clangula*	▪ Wetlands: lakes and rivers adjacent to forests	▪ Wetlands ▪ Water	▪ Water	▪ Water	Mid-April through August	▪ Wintering	▪ Wetland habitat loss and degradation	-0.4	-2.8	NA	NA
Common loon *Gavia immer*	▪ Water: lakes and ponds	▪ Water	▪ Water	▪ Water	Mid-May through October	▪ Migration	▪ Pesticides and other environmental contaminants: mercury, lead, organic pollutants, acid rain ▪ Fishing net and trap entanglement ▪ Oil spills ▪ Disturbance at nest and roost sites: recreational activity ▪ Habitat degradation and loss: shoreline development, reservoir management. ▪ Diseases: botulism and others	0.3	-2.2	NA	NA
Common nighthawk *Chordeiles minor*	▪ Developed/disturbed: burned forests and grasslands	▪ Developed/disturbed: burned forests and grasslands	▪ Open landscapes: South America	▪ Developed/disturbed: burned forests and grasslands	Late May through August	▪ Nesting	▪ Pesticides and other environmental contaminants: mosquito control ▪ Vehicle collisions	-2.3	-0.8	-1.3	-3.9
Dickcissel *Spiza americana*	▪ Grasslands: mesic ▪ Agriculture	▪ Grasslands: mesic ▪ Agriculture	▪ Grasslands: mesic ▪ Agriculture	▪ Grasslands: mesic ▪ Wetlands	Early May through August	▪ Nesting	▪ Pesticides and other environmental contaminants: deliberately poisoned in Venezuela ▪ Habitat alteration: conversion of native grasslands to croplands has reduced breeding success ▪ Disturbance at nest sites: hay-mowing	8.5	0.8	5.6	NA
Dunlin *Calidris alpina*	▪ Arctic tundra	▪ Wetlands	▪ Wetlands	▪ Wetlands	Late May through July	▪ Migration	▪ Pesticide and other environmental contaminants ▪ Disturbance at nest and roost sites	NA	NA	NA	Na
Eared grebe *Podiceps nigricollis*	▪ Water: ponds, lakes ▪ Wetlands: marshes	▪ Water: ponds, lakes ▪ Wetlands: marshes	▪ Marine habitats	▪ Salt lakes	Early May through August	▪ Nesting	▪ Collisions with structures ▪ Wetland habitat loss and degradation ▪ Disturbance at nest and roost sites	2.0	-3.5	6.1	4.8

TABLE J-7 NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA								**Breeding Bird Survey Trends[1] (percent population change per year)**			
Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Western Region**	**Wyoming**	**Colorado**	**Utah**
Evening grosbeak *Coccothraustes vespertinus*	▪ Montane forest	▪ Montane forest	▪ Irruptive migration	▪ Irruptive migration	Mid-May through early August	▪ Year-round	▪ Collisions with structures	-3.6	-16.3	-0.6	-1.3
Ferruginous hawk *Buteo regalis*	▪ Grasslands ▪ Shrub/shrub steppe	▪ Grasslands ▪ Shrub/shrub steppe	▪ Grasslands ▪ Shrub/shrub steppe	▪ Grasslands ▪ Shrub/shrub steppe	Late March through mid-August	▪ Nesting: north ▪ Year-round: south	▪ Collisions with structures and vehicles ▪ Disturbance at nest and roost sites: especially near mining sites ▪ Habitat degradation and loss: conversion to croplands, grazing, mining	1.0	0.3	0.3	-1.4
Flammulated owl *Plisoscops flammeolus*	▪ Ponderosa pine ▪ Mature, open, Montane forest	▪ Ponderosa pine ▪ Mature, open, Montane forest	▪ Irruptive migration	▪ Irruptive migration	Early May through mid-August	▪ Nesting	▪ Habitat loss: removal of snags, fire suppression ▪ Pesticides and other environmental contaminants	NA	NA	NA	NA
Forster's tern *Sterna forsteri*	▪ Wetlands: marshes.	▪ Wetlands: marshes	▪ Wetlands: marshes	▪ Wetlands: marshes	Early May through mid-August	▪ Migration	▪ Pesticides and other environmental contaminants ▪ Disturbance at nest and roost sites	-2.5	-5.0	NA	4.4
Franklin's gull *Larus pipixcan*	▪ Wetlands: marshes.	▪ Water and wetlands	▪ Water and wetlands	▪ Water and wetlands	Early May through July	▪ Migration	▪ Disturbance at nest and roost sites: very sensitive. Pesticides and other environmental contaminants ▪ Loss of wetland habitats	-7.0	20.9	NA	-12.8
Golden eagle *Aquila chrysaetos*	▪ Barren/sparsely Vegetated: canyons and cliffs ▪ Shrub/shrub steppe ▪ Big sagebrush ▪ Montane shrubland ▪ Grasslands ▪ Ponderosa pine ▪ Pinyon-juniper	▪ Grasslands ▪ Shrub/shrub steppe ▪ Big sagebrush ▪ Montane shrubland	▪ Partial migrant	▪ Partial migrant	Early April through August	▪ Year-round	▪ Inadvertently poisoned by ranchers ▪ Pesticide and other environmental contaminants ▪ Ingestion of lead ▪ Collision with structures and electrocutions ▪ Degradation of habitat: catastrophic fires, mining, development ▪ Disturbance at nest and roost sites	-0.2	1.4	-0.5	-1.6
Grasshopper sparrow *Ammodramus savannarum*	▪ Grasslands: preferred ▪ Agriculture	▪ Grasslands: preferred ▪ Agriculture	▪ Grasslands: preferred ▪ Agriculture	▪ Grasslands: preferred ▪ Agriculture	Early June through August	▪ Nesting	▪ Habitat loss and degradation: conversion of native prairie to agricultural fields, fire suppression/shrub invasion	-2.3	0.9	-5.1	-1.4
Gray vireo *Vireo vicinior*	▪ Pinyon-juniper	▪ Pinyon-juniper	▪ Desert scrubland	▪ Pinyon-juniper	Early May through August	▪ Nesting	▪ Habitat degradation: livestock grazing may concentrate cowbirds	0.9	NA	1.7	-0.5

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name ***Scientific Name***	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Greater sandhill crane *Grus canadensis tabida*	▪ Wetlands	▪ Wetlands ▪ Agriculture	▪ Wetlands ▪ Agriculture	▪ Wetlands	Early April through May	▪ Nesting ▪ Migration	▪ Habitat loss: wetland breeding areas, changes in agricultural practices in wintering and migratory areas, invasive plants ▪ Collisions with structures: power lines, wind turbines ▪ Pesticides and other environmental contaminants ▪ Disturbance at nest and roost locations	NA	NA	15.8	NA
Green-tailed towhee *Pipilo chlorurus*	▪ Shrub/shrub steppe	▪ Shrub/shrub steppe	▪ Lower Sonoran and Upland Sonoran Desert	▪ Variable: Riparian, shrub/shrub steppe	Early May through early August	▪ Nesting	▪ Habitat loss and degradation: conversion to rangelands, fire suppression	-0.4	0.3	-0.9	3.2
Harris's sparrow *Zonotrichia querula*	▪ Arctic tundra: Canada	▪ While migrating: riparian and agriculture	▪ Riparian ▪ Agriculture	▪ Riparian ▪ Agriculture	June and July	▪ Migration	▪ Habitat loss and degradation	NA	NA	NA	NA
Herring gull *Larus argentatus*	▪ Water: islands and rocky terraces near or in lakes	▪ Water	▪ Water	▪ Water	Early May through August	▪ Migration	▪ Water quality: oil spills ▪ Overfishing ▪ Deliberate control measures	-3.2	NA	NA	NA
Horned grebe *Podiceps auritus*	▪ Wetlands: marshes	▪ Water	▪ Water	▪ Water	Mid-May through early October	▪ Migration	▪ Water quality: oil spills. ▪ Habitat loss and degradation	-4.7	NA	NA	NA
Horned lark *Eremophila alpestris*	▪ Grasslands ▪ Agriculture	▪ Grasslands ▪ Agriculture	▪ Partial migrant	▪ Partial migrant	Early March through July	▪ Year-round	▪ Habitat loss and degradation ▪ Pesticides and other environmental contaminants	-1.6	-1.9	-1.5	-1.1
Hudsonian godwit *Limosa haemastica*	▪ Wetlands: sedge meadows intermixed with montane forests	▪ Wetlands	▪ Wetlands	▪ Wetlands	Mid-May through July	▪ Migration	▪ Degradation of habitat: energy development on breeding grounds, human-aided common raven population increase	NA	NA	NA	NA
Juniper titmouse *Baeolophus ridgwayi*	▪ Pinyon-juniper	▪ Pinyon-juniper	▪ Non-migratory	▪ Non-migratory	Mid-March through June	▪ Year-round	▪ Habitat loss and degradation: juniper removal	-0.2	NA	-0.9	2.2
Lark bunting *Calamospiza melanocorys*	▪ Grasslands ▪ Agriculture	▪ Grasslands ▪ Agriculture	▪ Grasslands ▪ Agriculture	▪ Grasslands ▪ Agriculture	Mid-May through July	▪ Nesting	▪ Pesticides and other environmental contaminants ▪ Collisions with structures and vehicles ▪ Mortality at stock tanks ▪ Disturbance at nest sites	-4.7	-3.0	-4.6	NA
Lesser scaup *Aythya affinis*	▪ Wetlands: marsh, Prairie Pothole Region, uplands near lakes	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	Early June through early September	▪ Nesting: north ▪ Wintering: south	▪ Water quality: oil spills and other environmental contaminants ▪ Fishing net entanglement. ▪ Wetland habitat loss and degradation	2.5	-3.0	NA	4.2

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name ***Scientific Name***	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Lesser yellowlegs *Tringa flavipes*	▪ Arctic tundra ▪ Boreal forest	▪ Wetlands	▪ Wetlands	▪ Wetlands	Early May through July	▪ Migration	▪ Shooting and trapping: in the Caribbean ▪ Wetland habitat loss and degradation: drainage, road construction	NA	NA	NA	NA
Lewis's woodpecker *Melanerpes lewis*	▪ Developed/disturbed: ponderosa pine post logging or burn ▪ Riparian	▪ Developed/disturbed: ponderosa pine post logging or burn ▪ Riparian	▪ Irruptive migration	▪ Irruptive migration	Early May through August	▪ Nesting	▪ Habitat degradation: fire suppression, intensive grazing, timber harvest of snags ▪ Disturbance at nest and roost sites: competition with European starling	-2.7	0.6	-2.7	NA
Lincoln's sparrow *Melospiza lincolnii*	▪ Riparian: densely shrubbed	▪ Riparian	▪ Tropical forests: Mexico	▪ Riparian	June through mid-August	▪ Nesting	▪ Pesticides: reduction of foraging habitat ▪ Degradation of habitat: livestock grazing ▪ Disturbance at nest sites	2.9	2.6	1.2	6.1
Loggerhead shrike *Lanius ludovicianus*	▪ Agricultural fields ▪ Developed/disturbed: parks, lawns, golf courses ▪ Shrub/shrub steppe	▪ Agricultural fields ▪ Disturbed/developed: parks, lawns, golf courses ▪ Shrub/shrub steppe	▪ Partial migrant	▪ Partial migrant	Early March through early July	▪ Year-round	▪ Pesticides and other environmental contaminants	-1.8	-0.7	-0.6	-0.7
Long-billed curlew *Numenius americanus*	▪ Grasslands: short-grass prairie with flat to rolling topography, near water ▪ Desert shrublands	▪ Wetlands	▪ Wetlands: marine	▪ Grasslands ▪ Agriculture ▪ Wetlands	Early April through July	▪ Nesting: north ▪ Migration: south	▪ Degradation of habitat: conversion of grasslands to agriculture, invasion of non-native plants ▪ Pesticides and other environmental contaminants ▪ Disturbance at nest and roost sites	1.3	1.7	-4.6	0.5
Mallard *Anas platyrhynchos*	▪ Wetlands	▪ Water ▪ Wetlands ▪ Agriculture	▪ Partial migrant	▪ Partial migrant	April through September	▪ Year-round	▪ Water quality: oil spills ▪ Ingestion of lead ▪ Collisions: susceptible to transmission lines that cross water ▪ Wetland habitat degradation	0.4	-0.6	-1.4	3.0
Marbled godwit *Limosa fedoa*	▪ Grasslands: native prairie ▪ Wetlands: marshes, flooded plains	▪ Wetlands: mudflats	▪ Coastal Wetlands	▪ Wetlands	Early May through July	▪ Migration	▪ Habitat degradation and loss: grassland conversion to agriculture, tidal mud flat loss ▪ Pesticides and other environmental contaminants ▪ Ingestion of lead and plastics ▪ Collisions with structures ▪ Disturbance at nest and roost sites	4.3	NA	NA	NA

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Mccown's longspur *Rhynchophanes mccownii*	▪ Grasslands: shortgrass prairie	▪ Grasslands	▪ Grasslands	▪ Grasslands	Early May through mid-August	▪ Nesting: north ▪ Migration: south	▪ Habitat degradation and loss: grassland conversion to agricultural fields, fire suppression ▪ Disturbance at nest sites: very sensitive	-2.1	-0.1	1.1	NA
Merlin *Falco columbarius*	▪ Open habitat in Montane forest	▪ Montane forest	▪ Montane Forest	▪ Montane Forest	Early April through August	▪ Wintering	▪ Degradation of habitat ▪ Pesticides and other environmental contaminants	3.2	-1.5	NA	NA
Mexican spotted owl *Strix occidentalis lucida*	▪ Barren/sparsely vegetated: narrow canyons ▪ Montane forest	▪ Barren/sparsely Vegetated: narrow canyons ▪ Montane forest	▪ Altitudinal migration	▪ Altitudinal migration	Early March through early June	▪ Year-round	▪ Degradation of habitat: logging practices	NA	NA	NA	NA
Mountain plover *Charadrius montanus*	▪ Grasslands: shortgrass prairie and heavily grazed areas	▪ Grasslands	▪ Developed/Disturbed: burned agricultural fields and sparsely vegetated habitats	▪ Grasslands: shortgrass prairie and heavily grazed areas	Mid-April through mid-August	▪ Nesting	▪ Degradation of habitat: removal of native grazers leading to shrub and tall grass invasion	-3.3	-0.6	-1.8	NA
Northern goshawk *Accipiter gentilis*	▪ Ponderosa pine ▪ Montane forest: sparsely vegetated understory and closed canopy	▪ Ponderosa pine ▪ Montane forest	▪ Partial migrant	▪ Partial migrant	Early April through July	▪ Year-round	▪ Degradation of habitat: timber harvest ▪ Disturbance at nest and roost sites	-0.1	0.1	3.5	-2.5
Northern harrier *Circus cyaneus*	▪ Wetlands: marshes, wet meadows and mesic grasslands	▪ Wetlands: marshes, wet meadows and mesic grasslands	▪ Partial migrant	▪ Partial migrant	Early April through mid-September	▪ Year-round	▪ Wetland habitat loss and degradation ▪ Pesticides and other environmental contaminants	-0.7	-1.0	-2.5	-2.2
Northern pintail *Anas acuta*	▪ Shallow wetlands: low vegetation, mesic grass fields, Prairie Pothole Region	▪ Shallow wetlands	▪ Shallow wetlands	▪ Water ▪ Wetlands	Early April through July	▪ Nesting	▪ Wetland habitat loss and degradation ▪ Pesticides and other environmental contaminants ▪ Collisions with structures	-4.3	-3.5	-4.6	2.8
Northern pygmy-owl *Glaucidium gnoma*	▪ Montane forest: dense stands ▪ Ponderosa pine	▪ Montane forest ▪ Ponderosa pine	▪ Altitudinal migration	▪ Altitudinal migration	Early April through June	▪ Year-round	▪ Habitat degradation: forestry practices that affect prey, woodpeckers, and nest cavities	0.9	4.8	3.8	NA
Olive-sided flycatcher *Contopus cooperi*	▪ Montane forest: mixed conifer	▪ Open areas in Montane forest	▪ Montane forest : Central and South America	▪ Montane forest ▪ Ponderosa pine ▪ Riparian	Early June through August	▪ Nesting	▪ Habitat degradation: fire suppression, and forest thinning	-3.0	-0.6	-1.0	-4.3
Pectoral sandpiper *Calidris melanotos*	▪ Arctic tundra	▪ Wetlands	▪ Wetlands: marshes and watered grasslands	▪ Wetlands ▪ Agriculture	June and July	▪ Migration	▪ Habitat degradation and loss: roads in breeding habitat, wetland loss in winter and migration habitat	NA	NA	NA	NA

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends**[1] **(percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Peregrine falcon *Falco peregrinus*	▪ Barren/sparsely vegetated: cliffs and canyons; man-made structures also are used	▪ Open landscapes in a variety of communities	▪ Open landscapes in a variety of communities	▪ Open landscapes in a variety of communities	Late May through early August	▪ Nesting	▪ Pesticides and other environmental contaminants ▪ Collisions with structures	2.4	11.7	18.9	0.9
Pine siskin *Spinus pinus*	▪ Montane forest: coniferous and mixed-coniferous/deciduous forests	▪ Montane forest: especially in the grassy areas below the trees	▪ Irruptive migrant	▪ Irruptive migrant	Late March through July	▪ Year-round	▪ Habitat loss: clearing of forests ▪ Pesticides and other environmental contaminants	-3.5	-3.5	-2.3	-1.6
Pinyon jay *Gymnorhinuscyanocephalus*	▪ Pinyon-juniper	▪ Pinyon-juniper	▪ Non-migratory	▪ Non-migratory	Mid-February through August	▪ Year-round	▪ Habitat loss and degradation	-4.3	-4.3	-4.0	-4.6
Piping plover *Charadrius melodus*	▪ Barren/sparsely Vegetated: primarily sandy or pebble beaches	▪ Water: shorelines of lakes	▪ Barren/sparsely vegetated: beaches, mudflats, and sand flats along the Gulf of Mexico and Atlantic coasts	▪ Water ▪ Wetlands: beaches, alkali flats, reservoir shorelines	Early May through August	▪ Migration	▪ Habitat loss and degradation ▪ Egg and chick predation	NA	NA	NA	NA
Prairie falcon *Falco mexicanus*	▪ Barren/sparsely vegetated: cliffs and bluffs	▪ Open grasslands ▪ Desertscrub ▪ Shrub/shrub steppe	▪ Partial migrant	▪ Partial migrant	Early April through July	▪ Year-round	▪ Habitat degradation and loss: large-scale conversion of grasslands to agricultural fields, extensive livestock grazing ▪ Disturbance at nest and roost sites ▪ Collision with structures: fences ▪ Pesticides and other environmental contaminants ▪ Shooting and trapping	1.0	-0.5	3.0	0.4
Purple martin *Progne subis*	▪ Montane forest: requires snags with nest cavities ▪ Developed/disturbed: uses bird houses	▪ Montane forest	▪ Grasslands: South America ▪ Agriculture: South America	▪ Migrates over a variety of habitats	Early April through July	▪ Nesting	▪ Habitat degradation and loss	-5.9	NA	6.6	0.6
Pygmy nuthatch *Sitta pygmaea*	▪ Ponderosa pine ▪ Montane forest	▪ Ponderosa pine ▪ Montane forest.	▪ Non-migratory	▪ Non-migratory	Early April through July	▪ Year-round	▪ Habitat degradation and loss: fire suppression, intensive logging, and intensive grazing	-1.0	NA	0.8	-6.6
Redhead *Aythya americana*	▪ Wetlands: large marshes, prairie slough, and potholes	▪ Wetlands: large marshes, prairie slough, and potholes.	▪ Specialist of coastal ecosystems	▪ Water: lakes, rivers, and river pools	May through early September	▪ Nesting: north ▪ Wintering: south	▪ Wetland habitat degradation and loss ▪ Fishing net entanglement ▪ Disturbance at nest site	-3.2	-0.8	2.2	5.8
Red-naped sapsucker *Sphyrapicus nuchalis*	▪ Ponderosa pine ▪ Montane forest: mixed conifers and aspen	▪ Ponderosa pine ▪ Montane forest: mixed conifers and aspen	▪ Pinyon-juniper ▪ Riparian ▪ Agriculture: orchards	▪ Pine-oak woodlands ▪ Agriculture: orchards	Mid-May through early August	▪ Nesting	▪ Habitat degradation: quaking aspen removal, intensive livestock grazing in riparian areas, fire suppression	1.1	0.1	2.6	1.9

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Ruddy turnstone *Arenaria interpres*	▪ High- and low-arctic rocky coasts and tundra	▪ Wetlands ▪ Water	▪ Ocean Wetlands: rocky shorelines, mudflats, sandflats	▪ Wetlands ▪ Water	June and July	▪ Migration: rare	▪ Habitat degradation and loss: coastal development ▪ Disturbance at nest and roost sites	NA	NA	NA	NA
Rufous hummingbird *Selasphorus rufus*	▪ Montane forest ▪ Riparian: thickets	▪ Montane forest ▪ Riparian: thickets	▪ Pine-oak forest: Mexico and Central America	▪ Grasslands: meadows ▪ Developed/disturbed: gardens and parks	Mid-April through mid-July	▪ Migration	▪ Habitat loss and degradation	-2.1	0.0	NA	NA
Rusty blackbird *Euphagus carolinus*	▪ Riparian ▪ Boreal forest	▪ Agriculture ▪ Wetlands ▪ Riparian ▪ Montane forest	▪ Wetlands	▪ Agriculture ▪ Wetlands ▪ Riparian	May through July	▪ Migration	▪ Degradation of habitat: clearcutting mesic woodlands ▪ Pesticides and other environmental contaminants: mercury in particular	-7.6	NA	NA	NA
Sagebrush sparrow *Artemisiospiza nevadensis*	▪ Big sagebrush	▪ Big sagebrush	▪ Big sagebrush ▪ Shrub/shrub steppe	▪ Big sagebrush ▪ Shrub/shrub steppe	Early August through July	▪ Nesting	▪ Habitat degradation: removal of big sagebrush, fire-induced exotic weed invasion, increased cowbird presence	-0.7	2.0	-4.4	-0.4
Sage thrasher *Oreoscoptes montanus*	▪ Big sagebrush	▪ Big sagebrush	▪ Big sagebrush ▪ Shrub/shrub steppe.	▪ Shrub/shrub steppe ▪ Pinyon-juniper	Mid-April through July	▪ Nesting	▪ Habitat degradation: removal of sagebrush, urbanization, conversion to agriculture	-1.4	-0.5	-1.3	-2.6
Semipalmated sandpiper *Calidris pusilla*	▪ Alpine: tundra near water	▪ Water: along the edges of lakes, open alkali ponds and sewage lagoons	▪ Water: Central America mudflats and shoreline	▪ Water: sparsely-vegetated freshwater.	June through mid-August	▪ Migration	▪ Habitat degradation on winter range ▪ Pesticides and other environmental contaminants	NA	NA	NA	NA
Short-billed dowitcher *Limnodromus griseus*	▪ Wetlands: grass or moss tundra, wet meadows, and bogs of boreal forests	▪ Wetlands: mud flats and agricultural fields	▪ Coastal mud flats and brackish lagoons	▪ Wetlands: salt marshes, sewage ponds, and flooded agricultural fields	June through early August	▪ Migration	▪ Wetland habitat degradation and loss	NA	NA	NA	NA
Short-eared owl *Asio flammeus*	▪ Grasslands	▪ Grasslands	▪ Partial migrant	▪ Partial migrant	Mid-March through June	▪ Year-round: north ▪ Wintering: south	▪ Habitat degradation: conversion of habitats to agriculture, grazing, recreation, barn owl competition	-1.8	-3.8	0.9	-0.3
Snow bunting *Plectrophenax nivalis*	▪ Alpine: arctic rocky shores, cliffs, scree, and tundra. Optimal nesting habitat is in rocky patches or boulder scree near well-vegetated areas	▪ Agricultural fields ▪ Grasslands ▪ Invasive	▪ Agricultural fields ▪ Grasslands ▪ Invasive: weedy and grassy fields, grain stubbles, and farmlands	▪ Agricultural fields, grasslands, and invasive-dominated areas such as: open weedy and grassy fields, grain stubbles, shores, and farmlands	June and July	▪ Wintering	▪ Climate change ▪ Potential for pesticide and other environmental contaminant poisoning	NA	NA	NA	NA
Snowy egret *Egretta thula*	▪ Water: lakes, rivers ▪ Wetlands: marshes	▪ Wetlands	▪ Water: freshwater swamps and lakes, ▪ Wetlands: lagoons	▪ Water ▪ Wetlands	Early April through July	▪ Nesting	▪ Pesticides and other environmental contaminants ▪ Wetland habitat degradation: oil spills	-0.6	NA	0.7	-1.6

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Snowy plover *Charadrius alexandrinus*	▪ Water: sand margins along rivers, lakes, and ponds, and dry mud flats ▪ Also uses man-made waste water ponds and reservoir margins	▪ Water	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	Mid-March through August	▪ Nesting ▪ Migration	▪ Habitat loss and degradation: expanding beach-front development ▪ Pesticides and other environmental contaminants ▪ Disturbance at nest and roost sites: predator expansion, humans recreating on the beach	NA	NA	NA	NA
Solitary sandpiper *Tringa solitaria*	▪ Wetlands: freshwater lakes and ponds in areas of muskeg bogs and spruce	▪ Water ▪ Wetlands	▪ Wetlands: marshes, rice fields, muddy edges of larger lakes and rivers	▪ Water and wetlands: marshes, shoreline	Late May through mid-July	▪ Migration	▪ Habitat loss and degradation	1.3	NA	NA	NA
Song sparrow *Melospiza melodia*	▪ Riparian ▪ Shrub/shrub steppe ▪ Pinyon-juniper/oak woodlands adjacent to freshwater; prefers dense cover	▪ Riparian ▪ Shrub/shrub steppe ▪ Pinyon-juniper/oak woodlands	▪ Partial migrant	▪ Partial migrant	Late March through early August	▪ Year-round	▪ Habitat degradation: extensive grazing removes wet thickets, water diversion, and conversion to agriculture	-0.7	0.4	0.0	0.5
Swainson's hawk *Buteo swainsoni*	▪ Grasslands, agriculture: nests built in scattered trees	▪ Grasslands ▪ Agriculture	▪ Grasslands ▪ Agriculture	▪ Grasslands ▪ Agriculture	April through mid-July	▪ Nesting	▪ Pesticide poisoning in South America ▪ Collisions with structures and vehicles ▪ Degradation of habitat in wintering range	2.0	0.5	0.7	2.4
Thayer's gull *Larus thayeri*	▪ Arctic rocky cliffs	▪ Water	▪ Marine coasts	▪ Water	Early May through August	▪ Migration	▪ Shooting and trapping. ▪ Water quality: oil spills	NA	NA	NA	NA
Upland sandpiper *Bartramia longicauda*	▪ Grasslands: obligate grassland species	▪ Grasslands ▪ Agriculture	▪ Pampas Grasslands: South America	▪ Grasslands ▪ Agriculture: cultivated fields, mowed hayfields, and pastures	May and June	▪ Nesting ▪ Migration	▪ Habitat degradation and loss: conversion of grasslands ▪ Disturbance at nest and roost sites: primarily cattle	-0.2	6.1	-4.4	NA
Veery *Catharus fuscescens*	▪ Riparian ▪ Aspen	▪ Riparian ▪ Aspen	▪ Riparian ▪ Aspen	▪ Riparian ▪ Aspen	Mid-May through mid-July	▪ Nesting ▪ Migration	▪ Habitat degradation and fragmentation: increased cowbird populations, destruction of forested habitats for agriculture	-2.2	-0.9	-5.3	NA
Virginia rail *Rallus limicola*	▪ Freshwater wetlands: shallow water, emergent cover with high invertebrate abundance	▪ Wetlands	▪ Wetlands	▪ Wetlands: flooded annual grasses or forbs with shallow water	Early April through July	▪ Nesting	▪ Pesticides and other environmental contaminants: bioaccumulation ▪ Collisions with structures and vehicles: frequently, utility wire ▪ Habitat degradation: flooding and changing water levels	-0.3	1.3	2.1	3.5

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name ***Scientific Name***	**Primary Nesting Habitat**	**Primary Foraging Habitat**	**Primary Wintering Habitat**	**Primary Migration Habitat**	**Nesting Dates**	**Activity in Project Area**	**Identified Threats**	**Breeding Bird Survey Trends[1] (percent population change per year)**			
								Western Region	**Wyoming**	**Colorado**	**Utah**
Virginia's warbler *Oreothlypis virginiae*	▪ Pinyon-juniper and oak woodlands	▪ Pinyon-juniper and oak woodlands	▪ Thornscrub and tropical deciduous woodlands.	▪ Riparian ▪ Ponderosa pine	Early May through July	▪ Nesting	▪ Habitat degradation: limited available habitat ▪ Disturbance at nest and roost sites: highly vulnerable	-1.4	NA	-1.0	1.5
Warbling vireo *Vireo gilvus*	▪ Riparian: mixed-deciduous woodlands	▪ Riparian: mixed-deciduous woodlands	▪ Riparian gallery forest ▪ Mangrove ▪ Agriculture	▪ Riparian: woodlands, thickets ▪ Desertscrub adjacent to water	May through early August	▪ Nesting	▪ Pesticides and other environmental contaminants ▪ Collisions with structures: television towers ▪ Habitat degradation and loss: streamside use by humans, and encroachment of white fir after logging	1.5	1.1	0.7	2.0
Western scrub-jay *Aphelocoma californica*	▪ Pinyon-juniper ▪ Riparian: thickets ▪ Shrub/shrub steppe	▪ Pinyon-juniper ▪ Riparian ▪ Shrub/shrub steppe	▪ Non-migratory	▪ Non-migratory	Late March through June	▪ Year-round	▪ No known human activity impacts	0.0	NA	-0.5	2.7
Whimbrel: North American population *Numenius phaeopus*	▪ Subarctic and arctic tundra	▪ Wetlands	▪ Wetlands: South America, also Florida and Galapagos	▪ Water: ponds, lakes ▪ Wetlands: marshes, and shorelines	Late May through mid-August	▪ Migration	▪ Wetland habitat degradation and loss ▪ Disturbance at nest and roost sites ▪ Pesticides and other environmental contaminants	NA	NA	NA	NA
White-faced ibis *Plegadis chihi*	▪ Wetlands: marshes	▪ Wetlands	▪ Coastal wetlands	▪ Wetlands ▪ Agriculture	Mid-May through July	▪ Nesting ▪ Migration	▪ Wetland habitat degradation and loss ▪ Pesticides and other environmental contaminants ▪ Disturbance at nest and roost sites	8.3	NA	7.0	0.0
White-throated swift *Aeronautes saxatalis*	▪ Barren/sparsely vegetated: crevices, cliffs, canyon walls, pinnacles, and large rocks ▪ Also man-made structures	▪ Open air	▪ Barren/sparsely vegetated	▪ Barren/sparsely vegetated	April through July	▪ Nesting	▪ Habitat degradation and loss: mining and destruction of cliffs, maintenance of older buildings ▪ Pesticide and other environmental contaminants	-1.5	-4.2	-0.4	0.3
White-winged scoter *Melanitta fusca*	▪ Wetlands: on large lakes.	▪ Water	▪ Coastal estuaries	▪ Water	June through mid-August	▪ Migration	▪ Pesticides and other environmental contaminants ▪ Habitat loss and degradation	NA	NA	NA	NA
Willet *Tringa semipalmata*	▪ Wetlands: marshes, or inundated grasslands	▪ Wetlands	▪ Californian coastal wetlands	▪ Water and wetlands.	May through July	▪ Nesting	▪ Pesticide and other environmental contaminants ▪ Collisions with structures and vehicles ▪ Habitat loss and degradation: conversion of grassland habitats	0.0	1.0	NA	-1.0

TABLE J-7
NATURAL HISTORY AND THREATS FOR MIGRATORY BIRD SPECIES IDENTIFIED AS BIRD SPECIES OF CONCERN IN THE PROJECT AREA

Common Name *Scientific Name*	Primary Nesting Habitat	Primary Foraging Habitat	Primary Wintering Habitat	Primary Migration Habitat	Nesting Dates	Activity in Project Area	Identified Threats	Breeding Bird Survey Trends[1] (percent population change per year)			
								Western Region	Wyoming	Colorado	Utah
Williamson's sapsucker *Sphyrapicus thyroideus*	▪ Montane forest	▪ Montane forest	▪ Pinyon-juniper	▪ Pinyon-juniper	May through July	▪ Nesting	▪ Habitat degradation: fire suppression ▪ Pesticide and other environmental contaminants: mountain pine beetle treatment	0.4	3.7	1.2	1.0
Willow flycatcher *Empidonax traillii*	▪ Riparian: woodlands and thickets including willow, hawthorn, water birch, and alder	▪ Riparian: woodlands and thickets including willow, hawthorn, water birch, and alder	▪ Riparian: woodlands and thickets including willow, hawthorn, water birch, and alder	▪ Riparian: woodlands and thickets including willow, hawthorn, water birch, and alder	June through August	▪ Nesting	▪ Habitat degradation and loss: overgrazing, water-flow alterations ▪ Collisions with structures: night migrants	-2.0	-1.2	-2.6	-0.6
Wilson's warbler *Cardellina pusilla*	▪ Riparian	▪ Riparian	▪ Tropical forest: Mexico and Central America	▪ Deciduous shrub habitats.	June and July	▪ Nesting	▪ Pesticides and other environmental contaminants ▪ Collisions with structures: television towers ▪ Habitat degradation: intensive grazing ▪ Disturbance at nest sites	-2.2	-1.5	-3.1	4.5
Yellow-billed cuckoo *Coccyzus americanus*	▪ Riparian: low, dense, scrubby vegetation.	▪ Riparian: low, dense, scrubby vegetation.	▪ Riparian: Central and South America	▪ Coastal scrubland	Early June through early September	▪ Nesting	▪ Habitat degradation and loss: conversion to agriculture, urbanization ▪ Collisions with structures: nocturnal migration ▪ Pesticides and other environmental contaminants	-2.1	NA	1.7	NA
Yellow-crowned night heron *Nyctanassa violacea*	▪ Wetlands	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	▪ Water ▪ Wetlands	Late March through mid-July	▪ Migration: juvenile dispersal	▪ Illegal harvest. ▪ Degradation of habitat	NA	NA	NA	NA

NOTES:
[1] Zero (0) = no change, negative = population decline, positive = population increase
NA = Not applicable

THIS PAGE INTENTIONALLY LEFT BLANK

J.6 Special Status Species Accounts

Special status species include plants or animals listed as threatened, endangered, or candidates for listing under the ESA as well as species assigned sensitive status by the USFS, BLM or the three states crossed by the Project.

Tables J-8 and J-10 include all of the special status plant and special status wildlife species carried forward for detailed analysis in the EIS. The known distribution, habitat requirements, and recent and historical locations for those species carried forward for analysis are detailed in the summaries below. The species accounts were compiled through review of scientific literature, agency reports, spatial data available from natural heritage programs, and collaboration with agency resource specialists. Species accounts for special status plants and wildlife that were not carried forward for analysis have not been included as these species will not be affected by the Project.

J.6.1 Special Status Plants

J.6.1.1 Federally Listed Threatened, Endangered, and Candidate Plant Species

Barneby Ridge-cress (*Lepidium barnebyanum*) – FWS: Endangered

Regulatory Status

Barneby ridge-cress was first proposed for listing along with 1,700 other vascular plants on June 16, 1976 (41 *Federal Register* [FR] 24523). On December 10, 1979, the FWS withdrew the proposal because it was not finalized within the 2-year time limit from the initial publication in the *Federal Register* (44 FR 70796). Beginning on October 13, 1983, and each successive year, the FWS made 1-year findings that the petition to list the species was warranted but precluded by other listing actions of higher priority. The final rule to list the species as endangered was published on September 28, 1990 (55 FR 39860). No critical habitat for Barneby ridge-cress has been designated to protect the species from potential vandalism that could occur if the specific geographical area of distribution was widely known. The FWS initiated a 5-year review on October 6, 2008 (73 FR 58261) and published their findings of the 5-year review in July 2011 (FWS 2011a).

The recovery plan for Barneby ridge-cress was published in 1993. The goals of the plan are to prevent the extinction and serious habitat degradation of the species and to downlist Barneby ridge-cress to threatened status. The species eventual recovery and delisting is uncertain. Downlisting criteria described in the plan includes: (1) existing stands and population numbers are maintained; (2) formal management designations for each of the three existing populations are established; (3) a total population of 20,000 individuals is documented for 5 years; and (4) five separate stands of at least 2,000 individuals are maintained (FWS 1993).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Argyle Canyon phacelia	*Phacelia argylensis*				✓				The species occurs within 5 miles of alternative routes in the Uinta Basin (Bureau of Land Management [BLM] 2012b).
Barneby's cat's eye	*Cryptantha barnebyi*				✓				The species occurs within 1 mile of Link U241 (BLM 2012b).
Barneby ridge-cress	*Lepidium barnebyanum*	E							The species is known to occur in the Project area. The species is only known from a single population located on less than 500 acres. This population is approximately 3 miles from Links U402, U430, and U431 (U.S. Fish and Wildlife Service [FWS] 2011a).
Beaver Rim phlox	*Phlox pungens*		✓						The species is not known to occur in the Project area (Wyoming Natural Diversity Database [WYNDD] 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003).
Bolander's camissonia	*Camissonia bolanderi*				✓				The species is known to occur in the Project area. Heritage data included occurrences of the species within 1 mile of Link U730 at Calf Mesa (Utah Natural Heritage Program [UNHP] 2012).
Caespitose cat's-eye	*Cryptantha caespitosa*			✓					The species is known to occur in the Project area. Heritage data included approximately 20 occurrences of the species within 5 miles of alternative routes in Utah and (Colorado Natural Heritage Program [CNHP] 2011; UNHP 2012).
Canyon sweet-vetch	*Hedysarum occidentale* var. *canone*						SS		The species is known to occur in the Project area in Carbon, Emery and Duchesne counties in Utah. Heritage data included one occurrence of the species near Tabiona approximately 7.5 miles from Link U420 (UNHP 2012).
Carrington daisy	*Erigeron carringtoniae*						SS		The species is known to occur in the Project area. Heritage data included thousands of individual occurrences of the species near Pine Spring in the East Mountains, which is approximately 0.5 mile from Link U630 (UNHP 2012).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Cedar Rim thistle	*Cirsium aridum*		✓						Suitable habitat was modeled near or in the Project area (Fertig and Thurston 2003) however, there are no known occurrences of the species in the Project area (WYNDD 2011). Based on discussions with agency specialists, it was determined that potentially suitable habitat for the species may or may not be present in the Project area (Blomquist 2012; Glennon 2012). Therefore, the species was carried forward for detailed analysis.
Cisco milkvetch	*Astragalus sabulosus* var. *sabulosus*	P			✓				The species is known to occur in the Project area. Heritage data included two occurrences of the species within 2.5 miles of Link U490 near the crossing of Interstate 70 and Nash Wash southwest of Cisco, Utah (UNHP 2012).
Clay phacelia	*Phacelia argillacea*	E							Individuals, reintroduction sites, and modeled habitat are known in proximity to Links U539 and U530 (UNHP 2012).
Clay reed-mustard	*Schoenocrambe argillacea*	T							Individuals and habitat occur where Link U400 crosses the Green River (Franklin 1992).
Creutzfeldt's cat's-eye	*Cryptantha creutzfeldtii*				✓		SS		The species is known to occur in the Project area near Huntington and Kenilworth, Utah (Links U590, U630, and U765). The species also occurs northwest of Price, Utah (within 5 miles of Links U548, U595, U546, and U522) and near Soldier Creek (Links U522, U523, and U492) (CNHP 2011; UNHP 2012).
Debris milkvetch	*Astragalus detritalis*			✓					The species is known to occur in the Project area in Utah and Colorado. Several occurrences of the species have been documented in the past 30 years (BLM 2011b; CNHP 2011; UNHP 2012; WYNDD 2011).
Dense twinpod	*Physaria condensata*		✓						The species is not known to occur in the Project area (WYNDD 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003).
Deseret milkvetch	*Astragalus desereticus*	T							Individuals and habitat are known in proximity to Link U621 (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**			**U.S. Forest Service Sensitive Species**			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	
Dolores River skeleton-plant	*Lygodesmia doloresensis*			✓	✓				The species is known to occur in the Project area. Heritage data included one recent occurrence of the species within 2 miles of alternative routes (CNHP 2011; UNHP 2012).
Duchesne milkvetch	*Astragalus duchesnensis*			✓					The species is known to occur in the Project area in proximity to alternative routes in Colorado (BLM 2011b, CNHP 2011).
Ephedra buckwheat	*Eriogonum ephedroides*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species near Link U240. The species also occurs north of Nine Mile Canyon (within 2.5 miles of Link U400) and in Dragon Canyon (within 3.2 miles of Link C196) (UNHP 2012).
Ferron's milkvetch	*Astragalus musiniensis*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species in Colorado and Utah (CNHP 2011; UNHP 2012).
Gibbens' beardtongue	*Penstemon gibbensii*		✓	✓	✓				The species is known to occur in the Project area in Wyoming. Another population occurs in Browns Park National Wildlife Refuge, near the Colorado-Utah border. Suitable habitat for the species occurs near alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Goodrich's blazingstar	*Mentzelia goodrichii*				✓	SS			The species is known to occur in the Project area. Heritage data included occurrences of the species in the vicinity of Argyle Canyon near Links U431 and U401 (UNHP 2012, WYNDD 2011).
Goodrich's columbine	*Aquilegia scopulorum* var. *goodrichii*				✓				The species occurs within 1 mile of Link U431 (BLM 2012b).
Graham's beardtongue	*Penstemon grahamii*			✓	✓				The species is known to occur in the Project area in Colorado and Utah. Heritage data included several occurrences of the species within 5 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Graham's cat's-eye	*Cryptantha grahamii*				✓				The species occurs within 5 miles of alternative routes in the Uinta Basin (BLM 2012b).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Grand Junction suncup	*Camissonia eastwoodiae*			✓					The species is known to occur in the Project area. Heritage data included three populations within 2.5 miles of Link C270 (CNHP 2011).
Green River greenthread	*Thelesperma caespitosum*		✓		✓	SS			The species is known to occur in the Project area. Heritage and BLM data included three occurrences of the species within 1 mile of Links U404 and U401 (BLM 2012b; UNHP 2012; WYNDD 2011).
Hairy Townsend daisy	*Townsendia strigosa* var. *prolixa*				✓				The species occurs within 5 miles of alternative routes in the Uinta Basin (BLM 2012b).
Hamilton's milkvetch	*Astragalus hamiltonii*				✓				The species was recorded along Link U322 in 1981 (UNHP 2012). BLM-mapped potential habitat for the species is crossed by Links U410, U391, and U390 (BLM 2012b).
Horseshoe milkvetch	*Astragalus equisolensis*			✓	✓				The species is known to occur in the Project area. Heritage data included occurrences of the species near Green River, Utah (Links U310, U321, U322, U380 and U390) (BLM 2012b; CNHP 2011; UNHP 2012). BLM-mapped potential habitat for the species is crossed by Links U390 and U310 (BLM 2012b).
Huber’s pepperwort	*Lepidium huberi*				✓				The species occurs within 5 miles of alternative routes in the Uinta Basin (BLM 2012b).
Jones' bluestar	*Amsonia jonesii*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species 1.5 miles from Link U390 (UNHP 2012). Heritage data included several other occurrences within 3 miles of Link C270 (CNHP 2011).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Jones' cycladenia	*Cycladenia humilis* var. *jonesii*	T							The species has not been recorded north of Interstate 80 in Utah. Heritage data did not include any occurrences of the species within 10 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011). The BLM Price Field Office conducted a study in 2012 to document distribution, identify habitat requirements, and model the extent of suitable habitat of the species (Sansom and Elliot 2012). The results of the study indicated that potentially suitable habitat for the species could be present along Links U727, U728, U729, U730, U732, U733 and U734 in Emery County, Utah.
Laramie false sagebrush	*Sphaeromeria simplex*		✓						Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003). Based on discussions with agency specialists, the species was carried forward for detailed analysis (Blomquist 2012).
Large-fruited bladderpod	*Lesquerella macrocarpa*		✓						The species is not known to occur in the Project area (WYNDD 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003).
Ligulate feverfew	*Parthenium ligulatum*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species near Links C220 and U242 (CNHP 2011; UNHP 2012).
Meadow pussytoes	*Antennaria arcuata*		✓						The species is not known to occur in the Project area (WYNDD 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003).
Narrowleaf evening primrose	*Oenothera acutissima*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species near Link U30 (CNHP 2011; UNHP 2012).
Narrow-stem gilia	*Gilia stenothyrsa*			✓					The species is known to occur within 1 mile of alternative routes near Links C186 and C196 in Colorado (BLM 2011a; CNHP 2011).

TABLE J-8 SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS									
			Bureau of Land Management Sensitive Species			**U.S. Forest Service Sensitive Species**			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Rationale and Nearest Known Location to the Project Area**
Ownbey's thistle	*Cirsium ownbeyi*		✓						The species is known to occur near the alternative routes in Utah and Colorado (BLM 2011a; CNHP 2011; UNHP 2012). Suitable habitat for the species is modeled in the Project area in Wyoming (Fertig and Thurston 2003).
Pariette cactus	*Sclerocactus brevispinus*	T							The species is known to occur in the Project area. The entire population of the species is within 5 miles of Links U400 and U402. Numerous occurrences of the species are within 1 mile of Link U402. (UNHP 2012). According to the FWS a single population that occupies approximately 72,000 acres in the Pariette Draw encompasses the entire species (FWS 2011b).
Persistent-sepal yellowcress	*Rorippa calycina*		✓						The species is known to occur in the Project area. Heritage data included occurrences of the species along Link W30 (WYNDD 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003).
Piceance bladderpod	*Lesquerella parviflora*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species within 20 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Psoralea globemallow (Head sphaeromeria)	*Sphaeralcea psoraloides*				✓				The species is known to occur in the Project area. Heritage data included occurrences of the species along Link U730, west of the town of Green River. Data from the BLM Price Field Office includes two populations of 15,000 individual plants. Heritage data did not include any other occurrences of the species within 35 miles of alternative routes (UNHP 2012).
Racemose milkvetch	*Astragalus racemosus* var. *treleasei*		✓						The species is not known to occur in the Project area (WYNDD 2011). Potentially suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003).
Rock hymenoxys	*Hymenoxys lapidicola*				✓				The species occurs within 5 miles of alternative routes in the Uinta Basin (BLM 2012b).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Rollins' cat's-eye	*Cryptantha rollinsii*			✓					The species is known to occur in the Project area. Heritage data included several occurrences of the species near alternative routes in Wyoming and Colorado (BLM 2011a; CNHP 2011; UNHP 2012; WYNDD 2011).
San Rafael cactus	*Pediocactus despainii*	E							The species is known to occur in the Project area. Heritage data included one small population near Furniture Draw, within 0.3 mile of Link U733. Other populations are within 5 miles of Link U730, U732, U733, and U734 (UNHP 2012).
Shrubby reed-mustard	*Schoenocrambe suffrutescens*	E							The species is known to occur in the Project area. FWS data included one occurrence of the species within 1 mile of Link U401 in the vicinity of Badlands Cliff/Wrinkles Road (FWS 2010). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Spanish bayonet	*Yucca harrimaniae* var. *sterilis*				✓				The species is known to occur in the Project area. Heritage data included seven known occurrences of the species; however, only one occurrence is less than 30 years old (2006) and is within 5 miles of Links U400 and U402 (UNHP 2012).
Stemless beardtongue	*Penstemon acaulis* var. *acaulis*		✓			SS			The species is not known to occur within 20 miles of alternative routes in Utah or Wyoming (UNHP 2012; WYNDD 2011) but does occur in proximity to alternative routes in Colorado (BLM 2011a). Potentially suitable habitat for the species was modeled in the Project area in Wyoming (Fertig and Thurston 2003).
Thompson's talinum	*Talinum thompsonii*				✓				The species is known to occur in the Project area. Heritage data included occurrences of the species within 5 miles of Links U732, U733, and U734 along Cedar Mountain. Heritage data indicates the entire population may be within 5 miles of alternative routes (UNHP 2012).

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**			**U.S. Forest Service Sensitive Species**			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	
Twisted buckwheat	*Eriogonum contortum*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species along Link U490 with additional occurrences near alternative routes in Utah and Colorado (CNHP 2011; UNHP 2012; WYNDD 2011).
Uinta Basin hookless cactus	*Sclerocactus wetlandicus*	T							The species is known to occur in the Project area. Heritage data included several occurrences of the species near alternative routes and more than 100 occurrences of the species in the Project area. Several individuals are located within 0.5 mile alternative route centerlines (CNHP 2011; UNHP 2012; WYNDD 2011).
Uinta Basin spring-parsley	*Cymopterus duchesnensis*			✓					The species is known to occur in the Project area. Heritage data included occurrences of the species but most of them were more than 25 years old. None of the occurrences were within 1 mile of the alternative routes (CNHP 2011).
Untermann's daisy	*Erigeron untermannii*				✓	SS			The species is known to occur in the Project area. Heritage data included occurrences of two large populations located on the Ashley National Forest along Links U431 and U432 (CNHP 2011; UNHP 2012).
Ute ladies'-tresses	*Spiranthes diluvialis*	T							The species is known to occur in the Project area. Heritage data included occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). Potentially suitable habitat is found throughout the Project area.
Western prairie fringed orchid	*Platanthera praeclara*	T							The species is found along the Platte River system and may be affected by water use in the Platte River watershed. The species is not known to occur near the Project area (CNHP 2011; UNHP 2012; WYNDD 2011) but could be indirectly affected by withdrawals of water from the Platte River basin for construction of the Project. Habitat for the species is not likely to be directly affected by the Project.

TABLE J-8
SPECIAL STATUS PLANT SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Wheeler's angelica	*Angelica wheeleri*							SS	The species is known to occur in the Project area. Heritage data included two occurrences at the junction of Salt Creek Canyon and McCune Canyon on the Uinta National Forest, which is approximately 5 miles from Link U650. Suitable habitat and populations of Wheeler's angelica are also known in Tie Fork and in the right and left forks of Indian Creek.
White River beardtongue	*Penstemon scariosus* var. *albifluvis*			✓	✓				The species is known to occur in Uintah County, Utah, and western Rio Blanco County, Colorado, near the White River to the vicinity of Evacuation Creek and in the vicinity of Willow Creek (FWS 2011c). Populations located along the White River around the Utah-Colorado border are near Links U240 and C220.

SOURCE: Nomenclature follows U.S. Fish and Wildlife Service 2012c for federally listed Threatened and Endangered species and NatureServe Explorer NatureServe 2012 for all others.
NOTES:

Endangered Species Act
- C = Candidate
- E = Endangered
- P = Petitioned
- T = Threatened

Bureau of Land Management
- ✓ = Sensitive species present in district

U.S. Forest Service
- SS = Sensitive Species with known habitat on Forest

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**			**U.S. Forest Service Sensitive Species**			**Rationale**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	
Abajo daisy	*Erigeron abajoensis*						SS		The species is not known to occur in the Project area (Colorado Natural Heritage Program [CNHP] 2011; Utah Natural Heritage Program [UNHP] 2012).
Abajo Peak draba	*Draba abajoensis*						SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).
Ackerman's green gentian	*Frasera ackermaniae*				✓				The species is not known to occur in the Project area (UNHP 2012).
Alcove rock-daisy	*Perityle specuicola*				✓				The species is not known to occur within 10 miles of alternative routes (UNHP 2012).
Angell's cinquefoil	*Potentilla cottamii*				✓				The species is not known to occur in the Project area (UNHP 2012).
Arapien stickleaf	*Mentzelia argillosa*				✓				The species is not known to occur in the Project area (UNHP 2012).
Arctic poppy	*Papaver radicatum*					SS			The species is not known to occur in the Project area (UNHP 2012; Wyoming Natural Diversity Database [WYNDD] 2011).
Arizona willow	*Salix arizonica*						SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).
Aromatic Indian breadroot	*Pediomelum aromaticum*			✓					The species is not known to occur within 15 miles of alternative routes (CNHP 2011).
Atwood's columbine	*Aquilegia atwoodii*				✓				The species is not known to occur in the Project area (UNHP 2012).
Barneby reed-mustard	*Schoenocrambe barnebyi*	E							The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Barneby woody aster	*Tonestus (=Aster) kingii* var. *barnebyana*							SS	The species is not known to occur in the Project area (UNHP 2012).
Bicknell milkvetch	*Astragalus consobrinus*								The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**			**U.S. Forest Service Sensitive Species**			**Rationale**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	
Blowout penstemon	*Penstemon haydenii*	E							The species is not known to occur in the Project area. Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). The Project is outside the U.S. Fish and Wildlife (FWS) range for the species.
Brownie ladyslipper	*Cypripedium fasciculatum*					SS			The species is not known to occur within 10 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Burke's draba	*Draba burkei*								The species is not known to occur in the Project area (UNHP 2012).
Cache beardtongue	*Penstemon compactus*								The species is not known to occur in the Project area (UNHP 2012).
Canyonlands lomatium	*Lomatium latilobum*			✓	✓		SS		The species is not known to occur within 5 miles of alternative routes (CNHP 2011; UNHP 2012).
Cathedral Bluff dwarf gentian	*Gentianella tortuosa*			✓					The species is not known to occur within 20 miles of alternative routes (CNHP 2011).
Cathedral Bluff meadow-rue	*Thalictrum heliophilum*			✓					The species is not known to occur within 9 miles of alternative routes (CNHP 2011).
Cedar Mountain Easter daisy	*Townsendia microcephala*		✓						The species is not known to occur in the Project area (WYNDD 2011).
Chatterley onion	*Allium geyeri* var. *chatterleyi*						SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).
Cisco milkvetch	*Astragalus sabulosus* var. *vehiculus*	P			✓				The species is not known to occur in the Project area (UNHP 2012).
Clay hill buckwheat	*Eriogonum viridulum*			✓					The species is not known to occur within 20 miles of alternative routes (CNHP 2011).
Colorado hookless cactus	*Sclerocactus glaucus*	T							The species was recorded within 2 miles of Link C270 (CNHP 2011). All other occurrences of the species are at least 15 miles from the alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011). The occurrence within 2 miles of Link C270 is likely erroneous, and there are no verified occurrences within 25 miles of the alternative routes (Clayton 2012).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

			Bureau of Land Management Sensitive Species			**U.S. Forest Service Sensitive Species**			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Rationale**
Cottam cinquefoil	*Potentilla cottamii*								The species is not known to occur in the Project area (UNHP 2012).
Cronquist daisy	*Erigeron cronquistii*								The species is not known to occur in the Project area (UNHP 2012).
Dainty moonwort	*Botrychium crenulatum*					SS		SS	The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
DeBeque milkvetch	*Astragalus debequaeus*			✓					The species is not known to occur in the Project area (CNHP 2011).
DeBeque phacelia	*Phacelia submutica*	T							The species is not known to occur in the Project area (CNHP 2011).
Desolation Canyon columbine	*Aquilegia desolaticola*				✓				The species is not known to occur in the Project area (UNHP 2012).
Dudley Bluffs bladderpod	*Physaria congesta*	T							The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Dudley Bluffs twinpod	*Physaria obcordata*	T							The species is not known to occur in the Project area (FWS 2011d).
Dune wildrye	*Elymus simplex* var. *luxurians*		✓						The species is not known to occur in the Project area (WYNDD 2011).
Eastwood's monkeyflower	*Mimulus eastwoodiae*			✓					The species is not known to occur within 20 miles of alternative routes (CNHP 2011).
Entrada skeletonplant	*Lygodesmia entrada*				✓				The species is not known to occur within 5 miles of alternative routes (UNHP 2012).
Fisher milkvetch	*Astragalus piscator*			✓					The species is not known to occur in the Project area (CNHP 2011).
Flat-top buckwheat	*Eriogonum corymbosum* var. *smithii*				✓				The species is not known to occur in the Project area (UNHP 2012).
Garrett bladderpod	*Lesquerella garrettii*							SS	The species is not known to occur in the Project area (UNHP 2012).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Garrett's fleabane	*Erigeron garrettii*							SS	The species is not known to occur in the Project area (UNHP 2012).
Giant fourwing saltbush	*Atriplex canescens* var. *gigantea*				✓				The species is not known to occur in the Project area (UNHP 2012).
Goodrich cleomella	*Cleomella palmeriana* var. *goodrichii*				✓				The species is not known to occur in the Project area (UNHP 2012).
Goodrich's penstemon	*Penstemon goodrichii*				✓				The species was recorded approximately 4 miles from Link U410 in 1979 (UNHP 2012). No other occurrences of the species have been recorded within 8 miles of alternative routes in the past 30 years (CNHP 2011; UNHP 2012; WYNDD 2011).
Graham columbine	*Aquilegia grahamii*					SS			The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
Grand Junction milkvetch	*Astragalus linifolius*			✓					The species is not known to occur in the Project area (CNHP 2011).
Gypsum Valley cat's-eye	*Cryptantha gypsophila*			✓					The species is not known to occur within 35 miles of alternative routes (CNHP 2011).
Heliotrope milkvetch	*Astragalus montii*	T							The species is not known to occur within 25 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Horse Canyon stickleaf	*Mentzelia multicaulis* var. *librina*				✓				The species is not known to occur within 5 miles of alternative routes (UNHP 2012).
Isely's milkvetch	*Astragalus iselyi*	P			✓		SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Jane's globemallow	*Sphaeralcea janeae*				✓				The species is not known to occur within 30 miles of alternative routes (UNHP 2012).
Jones' indigo-bush	*Psorothamnus polydenius* var. *jonesii*				✓				The species is not known to occur in the Project area (UNHP 2012).
Jones' Townsend daisy	*Townsendia jonesii* var. *lutea*				✓				The species is not known to occur in the Project area (UNHP 2012).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Kachina daisy	*Erigeron kachinensis*			✓			SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).
Laramie columbine	*Aquilegia laramiensis*		✓						The species is not known to occur in the Project area (WYNDD 2011).
LaSal daisy	*Erigeron mancus*						SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).
Last Chance townsendia	*Townsendia aprica*	T							The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Lesser yellow lady's slipper	*Cypripedium parviflorum (Cypripedium calceolus* var. *parviflorum)*								The species is not known to occur within 20 miles of alternative routes (UNHP 2012).
Limber pine	*Pinus flexilis*		✓						The species is not known to occur in the Project area (WYNDD 2011).
Link Trail columbine	*Aquilegia flavescens* var. *rubicunda*						SS		The species was recorded 4.75 miles from Link U630 in 1972. No other occurrences of the species have been recorded in the Project area (CNHP 2011; UNHP 2012).
Logan buckwheat	*Eriogonum loganum (E. brevicaule* var. *loganum)*								The species is not known to occur in the Project area (UNHP 2012).
Maguire campion	*Silene petersonii*						SS		The species is not known to occur within 10 miles of alternative routes in the past 30 years (CNHP 2011; UNHP 2012).
Maguire draba	*Draba maguirei*								The species is not known to occur in the Project area (UNHP 2012).
Maguire's daisy	*Erigeron maguirei*				✓				The species is not known to occur within 15 miles of alternative routes within the past 30 years (UNHP 2012).
Meadow milkvetch	*Astragalus diversifolius*		✓						The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Musinea groundsel	*Senecio musiniensis*						SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).
Mussentuchit gilia	*Alicielia tenuis*				✓				The species is not known to occur in the Project area (UNHP 2012).
Naturita milkvetch	*Astragalus naturitensis*			✓					The species is not known to occur in the Project area (CNHP 2011).
Navajo sedge	*Carex specuicola*	T							The species is not known to occur in the Project area (UNHP 2012).
Neese narrowleaf penstemon	*Penstemon angustifolius* var. *dulcis*				✓				The species is not known to occur within 5 miles of alternative routes (UNHP 2012).
Osterhout's cryptantha	*Cryptantha osterhoutii (Oreocarya osterhoutii)*			✓					The species is not known to occur in the Project area (CNHP 2011).
Parachute beardtongue	*Penstemon debilis*	T							The species is not known to occur in the Project area (CNHP 2011).
Park rockcress	*Arabis vivariensis*				✓				The species is not known to occur within 5 miles of alternative routes (UNHP 2012).
Peabody milkvetch	*Astragalus pubentissimus* var. *peabodianus*				✓				The species is not known to occur in the Project area (UNHP 2012).
Petiolate wormwood	*Artemisia campestris* ssp. *borealis* var. *petiolata*					SS			The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
Pinnate spring-parsley	*Cymopterus beckii*						SS		The species is not known to occur in the Project area (UNHP 2012; CNHP 2011).
Precocious milkvetch	*Astragalus proimanthus*		✓						The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-9 SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS									
			Bureau of Land Management Sensitive Species			**U.S. Forest Service Sensitive Species**			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Rationale**
Roan Cliffs blazingstar	*Mentzelia rhizomata (Nuttallia argillosa, Mentzelia argillosa)*			✓					The species is not known to occur within 20 miles of alternative routes (CNHP 2011).
Rock tansy	*Sphaeromeria capitata*			✓					The species was recorded 4.8 mile from Link C61 in 1983. No other occurrences of the species have been recorded in the Project area (WYNDD 2011).
Rockcress draba	*Draba globosa (=D. densifolia* var. *apiculata)*					SS		SS	The species is not known to occur within 4 miles of alternative routes (UNHP 2012; WYNDD 2011).
San Rafael milkvetch	*Astragalus rafaelensis*			✓					The species is not known to occur within 5 miles of alternative routes in the past 30 years (CNHP 2011).
Santaquin draba	*Draba santaquinensis*							SS	The species is not known to occur in the Project area (UNHP 2012).
Shultz stickleaf	*Mentzelia shultziorum*				✓				The species is not known to occur within 15 miles of alternative routes (UNHP 2012).
Singlestem buckwheat	*Eriogonum acaule*			✓					The species is not known to occur in the Project area (CNHP 2011).
Slender moonwort	*Botrychium lineare*					SS			The species is not known to occur within 1.5 miles of alternative routes in the last 60 years (UNHP 2012; WYNDD 2011). Surveys at the site in 2003 failed to locate the species (Franklin 2005).
Small rockcress (Fremont County rockcress)	*Boechera (Arabis) pusilla*	C	✓						The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Smith violet	*Viola franksmithii*								The species is not known to occur in the Project area (UNHP 2012).
Sweet-flowered rock jasmine	*Androsace chamaejasme* ssp. *carinata*						SS		The species is not known to occur in the Project area (CNHP 2011; UNHP 2012).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**			**U.S. Forest Service Sensitive Species**			**Rationale**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	
Trotter's oreoxis	*Oreoxis trotteri*				✓				The species is not known to occur within 15 miles of alternative routes (UNHP 2012).
Tufted frasera	*Frasera paniculata*			✓					The species is not known to occur within 20 miles of alternative routes (CNHP 2011).
Uinta greenthread	*Thelesperma pubescens*		✓						The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
Utah ivesia	*Ivesia utahensis*							SS	The species is not known to occur in the Project area (UNHP 2012).
Utah phacelia	*Phacelia utahensis*				✓				The species is not known to occur within approximately 4 miles of alternative routes in the past 80 years (UNHP 2012).
Utah spurge	*Euphorbia nephradenia*				✓				The species was recorded 3.3 miles from Link U730 in 1979. No other occurrences of the species have been recorded in the Project area (UNHP 2012).
Ward beardtongue	*Penstemon wardii*				✓				The species is not known to occur in the Project area (UNHP 2012).
Wasatch draba	*Draba brachystylis*								The species was recorded within 1 mile of Links U460 and U621 in 1901. No other recent occurrences of the species have been recorded in the Project area (UNHP 2012).
Wasatch fitweed	*Corydalis caseana spp. brachycarpa*							✓	The species is not known to occur in the Project area (UNHP 2012).
Wasatch jamesia	*Jamesia americana* var. *macrocalyx*							✓	The species is not known to occur within 15 miles of alternative routes (UNHP 2012).
Wasatch pepperwort	*Lepidium montanum* var. *alpinum*								The species is not known to occur in the Project area (UNHP 2012).
Wasatch shooting star	*Dodecatheon utahense*								The species is not known to occur in the Project area (UNHP 2012).
Winkler cactus	*Pediocactus winkleri*	T							The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Woodside buckwheat	*Eriogonum tumulosum*			✓					The species is not known to occur within 15 miles of alternative routes (CNHP 2011).

TABLE J-9
SPECIAL STATUS PLANT SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species			U.S. Forest Service Sensitive Species			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	
Wright fishhook cactus	*Sclerocactus wrightiae*	E							The species is outside of the range for the species identified by FWS in the 2008 status review of the species (FWS 2008a). The species is not known to occur within approximately 9 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Wyoming tansymustard	*Descurainia torulosa*		✓						The species is not known to occur in the Project area (WYNDD 2011). Suitable habitat for the species was modeled in the Project area (Fertig and Thurston 2003). However, based on discussions with agency specialists, it was determined that suitable habitat for the species is likely absent from the Project area (Glennon 2012). Therefore the species was not carried forward for detailed analysis.

SOURCE: Nomenclature follows FWS 2012e for federally listed Threatened and Endangered species and NatureServe Explorer NatureServe 2012 for all others.
NOTES:

Endangered Species Act
- C = Candidate
- E = Endangered
- P = Petitioned
- T = Threatened

Bureau of Land Management
- ✓ = Sensitive species present in district

U.S. Forest Service
- SS = Sensitive Species with known habitat on Forest

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
American beaver	*Castor canadensis*							MIS				Potentially suitable habitat for the species is present on the Uinta National Forest. The Project area is in the known range for the species (Smithsonian 2011). Heritage data did not include any occurrences of the species in the Project area (Colorado Natural Heritage Program [CNHP] 2011; Utah Natural Heritage Program [UNHP] 2012; Wyoming Natural Diversity Database [WYNDD] 2011).
American bittern	*Botaurus lentiginosus*								NSS3			The species is known to occur in the Project area. Heritage data included occurrences of the species at Stevies Lake, which is immediately west of Hanna, Wyoming, in 1985. No other occurrences of the species have been recorded in the Project area. Breeding Bird Survey and Christmas Bird Count report little, if any detection of the species in the Project area (Gough et al. 1998).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
American marten	*Martes americana*								NSS4			Portions of the Project area are in known range for the species (Wyoming Game and Fish Department [WGFD] 2010a). Heritage data included occurrences of the species in Flat Canyon in Manti-La Sal National Forest in 1954. Other occurrences of the species were recorded during surveys in the 1990s in the Taylor Mountain area of Ashley National Forest, which is within approximately 20 miles from alternative routes (UNHP 2012; WYNDD 2011).
American pika	*Ochotona princeps*								NSSU			Portions of the Project area are in the species range in Utah and Wyoming (Smithsonian 2011). Heritage data included two occurrences of the species on the Manti-La Sal National Forest in the 1950s. Heritage data did not include any recent occurrences in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
American white pelican	*Pelecanus erythrorhynchs*			✓	SS						SPC	The species frequents lakes and reservoirs throughout the Project area during spring and fall migration. Heritage data included occurrences of the species in portions of the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**[1]			**U.S. Forest Service Sensitive Species**			**State Sensitive Species**[2]			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Aquatic snails	Combined account								NSSU			Wyoming Heritage data for this group of species is lacking and little is known regarding distribution (WYNDD 2011). Aquatic snails potentially are present in portions of the Project area based on habitat requirements.
Ash-throated flycatcher	*Myiarchus cinerascens*								NSS3			The species is known to occur in the Project area. Heritage data included occurrences of the species along Red Creek at Richards Gap (Links W492, W493 and W520). Wyoming Heritage data included three other occurrences of the species in the Project area along the Little Snake River near the Wyoming-Colorado border (WYNDD 2011).
Baird's sparrow	*Ammodramus bairdii*		✓									The species is known to occur in the Project area. Transient individuals of the species may occur in portions of the Project area during seasonal migration. Heritage data included two occurrences of the species (essentially the same location) along Link W30 in 1981 (WYNDD 2011).
Bald eagle	*Haliaeetus leucocephalus*		✓	✓	SS	SS	SS	SS	NSS2	SC	SPC	The species is known to occur in the Project area. The species is wide-ranging and suitable habitat exists in Wyoming, Colorado and Utah.

TABLE J-10 SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS												
Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Big brown bat	*Eptesicus fuscus*								NSS4			The entire Project area is in the known range of the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Big free-tailed bat	*Nyctinomops macrotis*				SS						SPC	The species is known to occur in the Project area. Summer range for the species occurs in the Project area in Utah (Bradley et al. 2006).
Bigmouth shiner	*Notropis dorsalis*								NSS4			Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). The species was carried forward for analysis because it is known to inhabit the Platte River (U.S. Geological Survey [USGS] 2004).
Black rosy finch	*Leucosticte atrata*								NSSU			Portions of the Project area are in the known range for the species (WGFD 2010a). Heritage data included one occurrence of the species near Crescent Junction, Utah, in 1953 (Link U490). The species was observed at Buckhorn Wash, which is approximately 1 mile from Links U730 and U731. A flock was observed in 2002 at Bowrey Spring, which is approximately 1.5 miles from Link U90 (UNHP 2012). Heritage data did not include any occurrences of the species near the Project area in Wyoming (where the species is listed) (WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Black swift	*Cypseloides niger*				SS						SPC	Portions of the Project area are in the known range for the species. Potentially suitable breeding habitat for the species may occur around Utah Lake, which is near the Project area (Birds of North America 2005). Heritage data included one occurrence of the species in Utah at Red Creek near Fruitland in 1963 (UNHP 2012).
Black tern	*Chlidonias niger*								NSS3			WGFD has mapped foraging and nesting colonies of the species in the Project area. Portions of the Project are in suspected breeding areas for the species (WGFD 2010a). Wyoming Heritage data included one occurrence of the species at Hogback Lake, which is within 1 mile of the Project area (WYNDD 2011). Utah Heritage data included occurrences of the species near the Project area at Pelican Lake and Ouray National Wildlife Refuge (UNHP 2012).
Black-crowned night-heron	*Nycticorax nycticorax*								NSS3			Portions of the Project area are within the known range for the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species[1]**			**U.S. Forest Service Sensitive Species**			**State Sensitive Species[2]**			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Black-footed ferret	*Mustella nigripes*	EX							NSS1	FE/SE	S-ESA	The species could potentially occur in the Project area. Portions of the Project area are located in or near white-tailed prairie dog colonies with known populations of black-footed ferrets (U.S. Fish and Wildlife Service [FWS] 2008b). Reintroduction management areas for this species are crossed by alternative routes in Wyoming, Colorado, and Utah.
Bluehead sucker	*Catostomus discobolus*		✓	✓	CA				NSS1		CS	The species is known to occur in the Project area. The species inhabits rivers crossed by alternative routes of the Project (CNHP 2011; UNHP 2012; WYNDD 2011).
Bobolink	*Dolichonyx oryzivorus*				SS				NSS4		SPC	Most of the Project area in Wyoming is within the known range for the species (WGFD 2010a). Portions of the Project area in Utah and Colorado have potentially suitable habitat for the species. Heritage data included three occurrences of the species within 2 miles of the Project area; one occurrence of the species in Utah near Vernal (1963); one occurrence in Powell Park along the White River, west of Meeker; and one occurrence within 1 mile of the Project area along the Yampa River east of Craig (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Bonneville cutthroat trout	*Oncorhynchus clarkii utah*				CA		SS	SS/ MIS	NSS3		CS	Alternative routes are near and/or cross known habitat for the species. Heritage data included occurrences of the species on the western end of Project in Utah (UNHP 2012).
Bonytail	*Gila elegans*	E				o	o	o		FE/SE	S-ESA	Alternative routes are near and/or cross known habitat for the species, including the Green, Yampa, and Colorado river systems that are crossed by alternative routes. Designated critical habitat is found in the Green River downstream from the Project. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect bonytail or its habitat.
Boreal toad	*Bufo boreas boreas*	Petitioned	✓	✓	CA	SS	SS	SS	NSS1	SE	SPC	Alternative routes are near and/or cross potentially suitable habitat for the species. Heritage data included four records of specimens collected in Utah and Colorado within 1 mile of the Project area, but all are from approximately 50 years ago. No recent occurrences of the species have been recorded (CNHP 2011; UNHP 2012; WYNDD 2011). However, 110 individuals were translocated to Strawberry Reservoir, which is near the Project area in Utah.

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Brassy minnow	*Hybognathus hankinsoni*								NSS4	ST		The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). The species was carried forward for analysis because it inhabits the Platte River system.
Brewer’s sparrow	*Spizella breweri*		✓	✓					NSS4			The species is known to occur in the Project area. The species is wide ranging and occupies portions of the Project area during the breeding season (Birds of North America 2005). Heritage data included occurrences of the species in the Project area in Wyoming (CNHP 2011; UNHP 2012; WYNDD 2011).
Brown-capped rosy finch	*Leucosticte australis*								NSSU			The Project area is within the predicted range for the species in Wyoming (WGFD 2010a). Portions of the Project area in Mesa County, Colorado, are on the fringe of the known range for the species (Birds of North America 2005; Johnson et al. 2000).
Burrowing owl	*Athene cunicularia*		✓		SS				NSSU	ST	SPC	The species is known to occur in the Project area. The species is wide ranging and suitable habitat exists in the Project area in Wyoming, Colorado, and Utah (Birds of North America 2005). Heritage data included numerous occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Bushtit	*Psaltriparus minimus*								NSS3			The Project area is within the known range for the species (Sloane 2001; WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
California floater	*Anodonta californiensis*								NSSU		SPC	The species is known to occur near the Project area. Heritage data included one occurrence of the species at Burraston Ponds south of Mona, Utah, which is within 1 mile of the terminus of the Project (UNHP 2012; WYNDD 2011).
Canada lynx	*Lynx canadensis*	T				SS	SS	SS		FT/SE	S-ESA	This species is present at high elevations in Colorado, Wyoming, and potentially Utah. Although suitable habitat is not present, reintroduced individuals may disperse through the Project area. Critical habitat is designated outside the Project area.
Canvasback	*Aythya valisineria*								NSS3			Heritage data indicated that the species is not known to occur in the Project area (WYNDD 2011). However, Christmas Bird Count and Breeding Bird Survey include occurrences of the species near water bodies in the Project area (Gough et al. 1998). Seasonal migrants of the species may occur in portions of the Project area.
Canyon mouse	*Peromyscus crinitus*								NSS3			The Project area is within the known range for the species (Smithsonian 2011). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Caspian tern	*Hydroprogne caspia*								NSS3			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data included a single occurrence of the species in 1988 at Lake Boreham (Link U430), which is on the edge of the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Chestnut-collared longspur	*Calcarius ornatus*								NSS4			The species is known to occur near the Project area. Heritage data included recent occurrences of the species in the Project area in Wyoming (WYNDD 2011).
Clark’s grebe	*Aechmophorus clarkii*								NSSU			The species is known occur in the Project area.
Cliff chipmunk	*Tamias dorsalis*								NSS3			The Project area is within the predicted range for the species (WGFD 2010a) and known range for the species (Smithsonian 2011). Heritage data did not include any occurrences of the species within 15 miles of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Colorado pikeminnow	*Ptychocheilus lucius*	E				o	o	o		FE/ST	S-ESA	Some alternative routes for the Project are near and/or cross known habitat for the species. Spawning sites for the species are in the Green and Yampa rivers, which are crossed by alternative routes (FWS 2002a). Heritage data included occurrences of the species in all three states (CNHP 2011; UNHP 2012; WYNDD 2011). Designated critical habitat is found in the White, Yampa, and Green rivers in areas crossed by or downstream from the Project. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect Colorado pikeminnow or its habitat.
Colorado River cutthroat trout	*Oncorhynchus clarkii pleuriticus*		✓	✓	CA	SS/ MIS	SS	SS/ MIS	NSS2	SC	CS	Some alternative routes for the Project are near and/or cross known habitat for the species. Heritage data included occurrences of the species near alternative routes in Utah and Colorado (CNHP 2011; UNHP 2012, WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Columbia spotted frog	*Rana luteiventris*		✓		CA	SS	SS	SS	NSS3		CS	Some alternative routes for the Project are near and/or cross potentially suitable habitat for the species. Heritage data included occurrences of the species in the Project area in Utah within the past 10 years. Heritage data also included occurrences of the species along the San Pitch River near Mount Pleasant and north of Fairview (Links U631 and U600) and in the West Creek area south of Mona (Link U650) (CNHP 2011; UNHP 2012, WYNDD 2011).
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*		✓	✓	SS				NSS4	SC	S-ESA	The species is known to occur near the Project area. Heritage data included occurrences of the species near Links C13 and C100 (CNHP 2011; UNHP 2012; WYNDD 2011).
Common loon	*Gavia immer*								NSS1			The species is not known to occur in the Project area nor the Platte River system (Birds of North America 2005). However, the Wyoming Wildlife Action Plan predicts that suitable habitat for the species may be present in the Project area (WGFD 2010a). Heritage data included one occurrence of the species near the Project area in 1978. A single individual was observed along the North Platte River south of the junction with Interstate 80 along Link W30 (WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Common shiner	*Luxilus cornutus*								NSS4	ST		The species is known to inhabit the Platte River system in eastern Wyoming (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Cornsnake	*Elaphe guttata*				SS						SPC	The species inhabits areas along the Green River between Moab and Dinosaur National Monument (Bosworth 2003). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Desert bighorn sheep	*Ovis canadensis nelsoni*			✓			SS					Portions of the Project area are in designated suitable habitat for the species (Colorado Division of Wildlife [CDOW] 2006; Utah Division of Wildlife Resources [UDWR] 2008; WGFD 2010a).
Devil crayfish	*Cambarus diogenes*								NSSU			The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). However, distribution of the species is not well established. Therefore, the species was carried forward for analysis.
Dwarf shrew	*Sorex nanus*								NSS3			The Project area is within the known range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Eastern red bat	*Lasiurus borealis*								NSSU			The Project area is in the eastern edge of the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
Elk	*Cervus elaphus*					MIS	MIS					The species is known to occur in the Project area. Designated crucial habitats and migration corridors for the species are present in some portions of the Project area (CDOW 2006; UDWR 2005a; WGFD 2010a).
Eureka mountainsnail	*Oreohelix eurekensis*										SPC	The species is known to occur near the Project area. Heritage data included occurrences of the species near alternative routes in the Red Narrows area on the southern end of Uinta National Forest. Other occurrences of the species are recorded near alternative routes (UNHP 2012).
Fairy and tadpole shrimp	Combined account								NSSU			The distribution of species in these groups is poorly understood. Heritage data did not include any occurrences of this group of species (CNHP 2011; UNHP 2012; WYNDD 2011). However, based on habitat requirements, the species could be present in portions of the Project area.

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species**[1]			**U.S. Forest Service Sensitive Species**			**State Sensitive Species**[2]			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Fatmucket	*Lampsilis siliquoidea*								NSSU			The Project area is outside the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). The species was carried forward for analysis because it is known to inhabit the Platte River system.
Ferruginous hawk	*Buteo regalis*		✓	✓	SS				NSSU	SC	SPC	The species commonly occurs in the Project area.
Flammulated owl	*Otus flammeolus*					SS	SS	SS				The species is known to occur near the Project area. Heritage data included occurrences of the species in the Uinta Mountains. Heritage data included a single occurrence of the species north of Helper, Utah, in 1982 and older occurrences from the 1960s (CNHP 2011; UNHP 2012; WYNDD 2011).
Flannelmouth sucker	*Catostomus latipinnis*		✓	✓	CA				NSS1		CS	Some alternative routes for the Project are near and/or cross known habitat for the species (CNHP 2011; UNHP 2012; WYNDD 2011).
Flathead chub	*Platygobio gracilis*								NSS4	SC		The species is not known to occur in the Project area. The species was carried forward for analysis because it is known to inhabit the Platte River system.

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Forster's tern	*Sterna forsteri*								NSS3			The species is known to occur in the Project area. Heritage data included three occurrences of the species southwest of Rawlins near Hogback Lake (Link W30) (CNHP 2011; UNHP 2012; WYNDD 2011).
Franklin's gull	*Leucophaeus pipixcan*								NSS3			According to the Wyoming Wildlife Action Plan, the Project area is within the predicted range for the species (WGFD 2010a). However, Birds of North America indicates that the Project area is well outside the known range for the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). The species was carried forward for analysis because water bodies near the Project area exhibit characteristics of suitable habitat for the species and are within the range of the species.
Fringed myotis	*Myotis thysanodes*		✓	✓	SS				NSS3		SPC	Heritage data did not include any known occurrences of the species in the Project area; however, some occurrences have been recorded within 10 miles of alternative routes in Utah (CNHP 2011; UNHP 2012; WYNDD 2011). The species was carried forward for analysis because portions of the Project area are in suitable habitat for the species.
Golden eagle	*Aquila chrysaetos*					MIS	MIS					The species commonly occurs in the Project area.

TABLE J-10 SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Grasshopper sparrow	*Ammodramus savannarum*				SS				NSS4		SPC	Migrant individuals of the species may pass through the Project area in the summer, even though habitats in the Project area are considered marginal for the species. Heritage data included five occurrences of the species in the Uinta Basin (CNHP 2011; UNHP 2012; WYNDD 2011).
Gray wolf	*Canis lupus*	SPC								FE/SE	SS	Suitable habitats for the species are in portions of the Project area. Utah Heritage data included two occurrences of the species near the Project area in Utah that were reported by members of the general public (UNHP 2012). Both observations were made in 1989 and may have been the same individual wolf. Wyoming Heritage data included one occurrence of the species in 2003 and was the first observation in the area in 22 years (WYNDD 2011). This observation was made by a WGFD employee.
Great Basin gopher snake	*Pituophis catenifer deserticola*								NSS2			The Project area is within the known range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Great Basin pocket mouse	*Perognathus parvus*								NSS3			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area in the past 50 years. The closest recent occurrence of the species was recorded approximately 18 miles from alternative routes in 1990 (CNHP 2011; UNHP 2012; WYNDD 2011).
Great Basin spadefoot	*Spea intermontana*		✓	✓					NSSU			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data included occurrences of the species in the Project area in Wyoming and Colorado (CNHP 2011; UNHP 2012; WYNDD 2011).
Greater sage-grouse	*Centrocercus urophasianus*	C	✓	✓	CN	SS/ MIS	SS	SS	NSS2	SC	S-ESA	The species is known to occur in the Project area in all three states and is heavily monitored (CNHP 2011; UNHP 2012; WYNDD 2011).
Greater sandhill crane	*Grus canadensis tabida*								NSS4	SC		The species is known to occur in the Project area. Portions of the Project area include suitable habitat for the species (CDOW 2006; WGFD 2010a). Heritage data included occurrences of the species along the North Platte, Little Snake, and Yampa rivers and in Routt National Forest (CNHP 2011; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Greater short-horned lizard	*Phrynosoma hernandesi*								NSS4			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
Humpback chub	*Gila cypha*	E				o	o	o		FE/ST	S-ESA	The species is known to occur in the Project area. Heritage data included four known occurrences of the species that are crossed by or are in proximity to alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011). Designated critical habitat is found downstream from the Project in the Yampa River and Green River. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect humpback chub or its habitat.
Iowa darter	*Etheostoma exile*								NSS3	SC		The species is known to occur in the Project area. The species is found in the Yampa River near Dinosaur National Monument (USGS 2004).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
June sucker	*Chasmistes liorus*	E						o			S-ESA	June sucker is found in Utah Lake and spawns intermittently at the mouth of the Spanish Fork River. No known occurrences of the species exist in the 2-mile-wide study corridor (UNHP 2012). Sucker populations occur in tributaries of Utah Lake including the Provo River. It is probable the June sucker once spawned in the Spanish Fork River, but irrigation depletions and habitat alteration have left this area uninhabited (U.S. Fish and Wildlife Service [FWS] 1999a).
Juniper titmouse	*Baeolophus ridgwayi*								NSS3			The species is known to occur in the Project area. Heritage data included 10 occurrences of the species in the Project area along Links W492, W520, and W493 (CNHP 2011; UNHP 2012; WYNDD 2011). A Christmas Bird Count and Breeding Bird Survey report included occurrences of the species in Colorado and Utah (Gough et al. 1998).
Kit fox	*Vulpes macrotis*			✓	SS					SE	SPC	Portions of the Project area are within the known range for the species (CDOW 2006; UDWR 2005a). Heritage data included occurrences of the species in the Project area in Grand County, Utah, and Mesa County, Colorado (CNHP 2011, UNHP 2012).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Land snails	Combined account								NSSU			Wyoming Heritage data for this group of species is lacking and little is known regarding distribution (WYNDD 2011). Land snails potentially are present in portions of the Project area based on habitat requirements.
Lark bunting	*Calamospiza melanocorys*								NSS4			The species may occur in the Project area in Wyoming during summer months. Heritage data included one occurrence of the species 20 years ago and two other observations from 1940 along Link U490 in Utah (UNHP 2012). Wyoming Heritage data did not include any occurrences of the species (WYNDD 2011).
Least chub	*Iotichthys phlegethontis*				SS						SPC	A UDWR study referenced monitored populations of the species in Burraston Ponds near Mona, Utah, which is approximately 1 mile from Links U640 and U650 (Bailey et al. 2005).
Least tern (interior population)	*Sternula antillarum*	E								FE/SE		The species inhabits areas along the Platte River in Nebraska (Birds of North America 2005) and may be affected by water use in the Platte River watershed. Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Lesser scaup	*Aythya affinis*								NSS3			The species was reported in the general Project area, but no detailed locations were available (Cook 1984). A Christmas Bird Count and Breeding Bird Survey report occurrences of the species near bodies of water in the Project area (Gough et al. 1998).
Lewis's woodpecker	*Melanerpes lewis*				SS				NSSU		SPC	Known breeding habitat for the species is in portions of the Project area (Birds of North America 2005). Heritage data included occurrences of the species in the Project area along Nebo Creek and numerous occurrences of the species along the Green River (UNHP 2012).
Lincoln's sparrow	*Melospiza lincolnii*					MIS						The Project area is within the known range of the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Little brown myotis	*Myotis lucifugus*								NSS4			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Loggerhead shrike	*Lanius ludovicianus*		✓									Known breeding habitat for the species is in portions of the Project area (Birds of North America 2005). Heritage data included occurrences of the species in the Project area in Wyoming (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Long-billed curlew	*Numenius americanus*		✓	✓	SS				NSS3	SC	SPC	The species is known to occur in the Project area (Birds of North America 2005).
Long-eared myotis	*Myotis evotis*		✓						NSS3			Portions of the Project area are within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Long-legged myotis	*Myotis volans*								NSS3			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Long-nosed leopard lizard	*Gambelia wislizenii*			✓						SC		The species is known to occur in the Project area. Heritage data included several occurrences of the species in the Project area in Garfield and Mesa counties, Colorado (CNHP 2011).
Macroinvertebrates (aquatic)	Combined Account					MIS	MIS					Numerous species inhabit the waterways in the Project area.
McCown's longspur	*Calcarius mccownii*								NSS4			The species may breed and forage in grassland habitats near the Aeolus substation during the summer (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10 SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS												
			Bureau of Land Management Sensitive Species[1]			**U.S. Forest Service Sensitive Species**			**State Sensitive Species**[2]			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	**Rationale and Nearest Known Location to the Project Area**
Merlin	*Falco columbarius*								NSSU			The species is known to occur in the Project area. Heritage data included relatively recent occurrences of the species along Muddy Creek (Link W111), east of Hogback Lake, and along the North Platte River (Link W30) (WYNDD 2011).
Mexican spotted owl	*Strix occidentalis lucida*	T								FT/ST	S-ESA	The Project area is within the known range for the species (Birds of North America 2005). The Project area is outside designated critical habitat for the species. Potentially suitable habitat for the species may be present in portions of the Project area. Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Milk snake	*Lampropeltis triangulum taylori*			✓								Distribution, range, and recorded observations of this subspecies are lacking. Heritage data included occurrences of the species in Utah (UNHP 2012).
Moose	*Alces alces*								NSS4			The species is known to occur in the Project area. Portions of the Project area are within suitable habitats and range for the species.
Mountain plover	*Charadrius montanus*		✓	✓	SS				NSSU	SC	SPC	Portions of the Project area include known breeding areas for the species (Birds of North America 2005).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Mountain sucker	*Catostomus platyrhynchus*			✓						SC		Portions of the Project area in Colorado and Utah are within the known range for the species (Colorado Parks and Wildlife 2010); (Belica et al. 2006). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Mountain whitefish	*Prosopium williamsoni*								NSS4			The species inhabits the Yampa River system (WGFD 2010a), which is crossed by alternative routes. Heritage data included two occurrences of the species in the Yampa River near Hayden, Colorado (CNHP 2011; UNHP 2012; WYNDD 2011).
Mule deer	*Odocoileus hemionus*					MIS	MIS					The species is known to occur throughout the Project area. Portions of the Project area are within suitable habitats and range for the species.
North American wolverine	*Gulo gulo luscus*					SS			NSS3	SE		The predicted range for the species is outside the Project area. The species may have been extirpated from Wyoming and Utah. (UDWR 2005a; WGFD 2010a). UNHP data included two occurrences of the species near Link U600 in the Manti-La Sal National Forest. However, the sightings appear to have been contested (UNHP 2012).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Northern flying squirrel	*Glaucomys sabrinus*								NSS4			The Project area is on the extreme edge of predicted range for the species (WGFD 2010a). Wyoming Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011). Utah Heritage data included one occurrence of the species from 1966 in Brook Meadow, which is approximately 10 miles northeast of Helper (UNHP 2012).
Northern goshawk	*Accipter gentilis*		✓	✓	CA	SS/ MIS	SS/ MIS	SS/ MIS	NSSU		CS	The species is known to occur in portions of the Project area. Heritage data included occurrences of the species, primarily on U.S. Forest Service lands throughout the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Northern leatherside chub	*Lepidomeda copei*		✓		CA				NSSU			The Utah Vertebrate Report included maps that indicate that the species may occur in the Project area (UNHP 2003). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Northern leopard frog	*Rana pipiens*		✓	✓					NSSU	SC		The species is known to occur in portions of the Project area. Heritage data included occurrences of the species in Utah (UNHP 2012).
Northern pintail	*Anas acuta*								NSS3			The species may occur near water habitats in the Project area, primarily in winter months. Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Northern plains killifish	*Fundulus kansae*								NSS4			The species is known to occur in the eastern Platte River system in Wyoming (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
Northern tree lizard	*Urosaurus ornatus wrighti*								NSS1			The Project area is within the known range for the species (WGFD 2010a; Stebbins 2003). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
Olive-backed pocket mouse	*Perognathus fasciatus*								NSS4			The species is known to occur in the Project area. Heritage data included occurrences of the species in the Project area (WYNDD 2011).
Oreohelix mountain snails	Combined account								NSSU			The distribution of this group of species is poorly understood but could be present in the Project area based on habitat requirements. Wyoming Heritage data did not include any occurrences of the species for this group of species (WYNDD 2011).
Pale milksnake	*Lampropeltis triangulum multistriata*								NSS3			The Project area extends into the western edge of the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Pallid bat	*Antrozous pallidus*								NSS3			The Project area is within the known range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Pallid sturgeon	*Scaphirhynchus albus*	E										The species is native to the Platte River in eastern Nebraska and is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011); however, it may be affected by water use in the Platte River watershed in Wyoming.
Peregrine falcon	*Falco peregrinus anatum*		✓	✓		SS	SS	SS	NSS3	SC		The species is known to occur in portions of the Project area. Heritage data included occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Pill clams	Combined account								NSSU			This group of species may be present in the Project area based on habitat requirements (WGFD 2010a). WGFD indicates that pill clams could be present in some water systems in the Project area in Wyoming. Heritage data did not include any occurrences for this group of species (WYNDD 2011).
Pinyon mouse	*Peromyscus truei*								NSS3			The Project area is within the known range for the species (Smithsonian 2011). Heritage data included one occurrence of the species in the Project area approximately 5 miles west of Baggs, Wyoming, in 1977 (WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Piping plover	*Charadrius melodus circumcinctus*	T								FT/ST		The species has no designated critical habitat in the Project area. Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011). This species is found along the Platte River system in Nebraska and may be affected by water use in the Platte River watershed.
Plain pocketbook	*Lampsilis cardium*								NSSU			The Project area is outside the predicted range for the species (WGFD 2010a). The species was carried forward for detailed analysis because it occurs in the Platte River system.
Plains black-headed snake	*Tantilla nigriceps*								NSSU			The Project area is within the predicted range for the species (WGFD 2010a). Other sources indicated the Project area is outside the known range for the species (Stebbins 2003). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Plains orangethroat darter	*Etheostoma spectabile*								NSSU	SC		The species occurs in the extreme eastern Platte River in Wyoming (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Plains topminnow	*Fundulus sciadicus*								NSS3			The species occurs in the extreme eastern Platte River in Wyoming (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).

TABLE J-10 SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS													
			Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	**Rationale and Nearest Known Location to the Project Area**
Pond snails (combined account)	(*Stagnicola*)								NSSU			Wyoming Heritage data for this group of species is lacking and little is known regarding distribution (WYNDD 2011). This group of species was carried forward for detailed analysis because they potentially are present in portions of the Project area based on habitat requirements.
Pygmy nuthatch	*Sitta pygmaea*								NSSU			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
Pygmy rabbit	*Brachylagus idahoensis*	SPC	✓		SS				NSS3		SPC	The species is known to occur in portions of the Project area (CDOW 2006; UDWR 2005a; WGFD 2010a). Heritage data included occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species[1]**			**U.S. Forest Service Sensitive Species**			**State Sensitive Species[2]**			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Razorback sucker	*Xyrauchen texanus*	E				o	o	o		FE/SE	S-ESA	The species is known to occur in the Project area in Utah and Colorado. The species inhabits the Green, Yampa, and Colorado river systems, which are crossed by alternative routes (FWS 2002b). Heritage data included occurrences of the species (CNHP 2011; UNHP 2012; WYNDD 2011). Designated critical habitat is found in the White, Yampa, and Green rivers in areas crossed by or downstream from the Project. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect razorback sucker or its habitat.
Redhead	*Aythya americana*								NSS3			Winter migrants of the species may be present near areas of water in the Project area (Gough et al. 1998). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Red-naped sapsucker	*Sphyrapicus nuchalis*					MIS						The Project area is within the known range for the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (UNHP 2012; WYNDD 2011).
Ringed crayfish	*Orconectes neglectus*								NSSU			The species inhabits the Platte River system (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
River otter	*Lontra canadensis*								NSSU	ST		The species is known to inhabit river systems in the Project area. Heritage data included occurrences of the species near Flaming Gorge, Wyoming (CNHP 2011; UNHP 2012; WYNDD 2011).
Rocky Mountain bighorn sheep	*Ovis canadensis canadensis*					SS		SS	NSS4			The species is known to occur in the Project area. Potentially suitable habitat for the species is present in portions of the Project area.
Roundtail chub	*Gila robusta*		✓	✓	CA				NSS1	SC	CS	The species is known to inhabit river systems in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Sage sparrow	*Amphispiza belli*		✓						NSS4			The species is known to occur in portions of the Project area. Breeding habitat for the species is present in the Project area (Birds of North America 2005).
Sage thrasher	*Oreoscoptes montanus*		✓						NSS4			The species is known to occur in portions of the Project area. Wyoming Heritage data included occurrences of the species in the Project area (WYNDD 2011).
Short-eared owl	*Asio flammeus*				SS				NSS4		SPC	The species is known to occur in the Project area. Suitable habitat for the species is scattered throughout the Project area.
Smooth greensnake	*Opheodrys vernalis*								NSS3		SPC	The Project area is within the known range of the species (Redder et al. 2006). Utah Heritage data included one occurrence of the species near Current Creek at Link U420 (UNHP 2012).

TABLE J-10 SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS												
			Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	**Rationale and Nearest Known Location to the Project Area**
Snowy egret	*Egretta thula*								NSS3			The species is known to occur along some waterways in the Project area in Wyoming (Birds of North America 2005).
Song sparrow	*Melospiza melodia*					MIS						The Project area is within the known range for the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Southern Bonneville springsnail	*Pyrgulopsis transversa*										SPC	The species is known to occur in the Project area. Heritage data included occurrences of the species in Thistle Creek, near Link U625 (UNHP 2012).
Southern leatherside chub	*Lepidomeda aliciae*				CA		SS	SS			SPC	The species is known to occur in water systems in the Project area (UNHP 2012).
Southwestern willow flycatcher	*Empidonax traillii extimus*	E								FE/SE	S-ESA	Portions of the Project area in Utah are within the breeding range of the species (Sedgwick 2000). Critical habitat for the species has been designated along the Colorado River, downstream from alternative routes (FWS 2005a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Spotted bat	*Euderma maculatum*		✓		SS	SS	SS	SS	NSS3		SPC	Suitable roosting and foraging habitats for the species are present in the Project area (Luce and Keinath 2007). Heritage data included one occurrence of the species along Chokecherry Creek on the Ashley National Forest; approximately 3 miles north of Link U401 (CNHP 2011; UNHP 2012; WYNDD 2011).
Stonecat	*Noturus flavus*									SC		The species is known to inhabit the Platte River system, which is in the Project area (USGS 2004). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Suckermouth minnow	*Phenacobius mirabilis*								NSS2	SE		The species is known to inhabit the Platte River system, which is in the Project area (USGS 2004). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Swainson's hawk	*Buteo swainsoni*								NSSU			The species is known to occur in portions of the Project area. Heritage data included occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Three-toed woodpecker	*Picoides dorsalis*				SS	SS	SS	SS/ MIS	NSSU		SPC	The Project area is within the known range for the species (Birds of North America 2005). Heritage data included one occurrence of the species in the Project area and near alternative routes in 1930. A single adult was detected along Reservation Ridge during a playback survey in 1989. Two other adults were detected along Reservation Ridge in 1989. Links 513 and 515 are along Reservation Ridge (Allen 2013; CNHP 2011; UNHP 2012; WYNDD 2011).
Townsend's big-eared bat	*Corynorhinus townsendii*		✓	✓	SS	SS	SS	SS	NSS2	SC	SPC	Suitable roosting and foraging habitats for the species are present in the Project area (Oliver 2000). Heritage data did not include any occurrences of the species within 1 mile of alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).
Trumpeter swan	*Cygnus buccinator*		✓						NSS2			The species occasionally is present in portions of the Project area in Wyoming. Heritage data included one occurrence of the species at Hogback Lake in 1985 and one occurrence along Muddy Creek in 1997, which are both near Link W110 (WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species[1]**			**U.S. Forest Service Sensitive Species**			**State Sensitive Species[2]**			**Rationale and Nearest Known Location to the Project Area**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Vagrant shrew	*Sorex vagrans*								NSS4			The Project area is outside the known range for the species according to North American Mammals online database (Smithsonian 2011). However, the Project area is within the predicted range for the species according to the Wyoming Wildlife Action Plan (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Virginia rail	*Rallus limicola*								NSS3			The Project area is within the known range for the species (Birds of North America 2005).
Warbling vireo	*Vireo gilvus*					MIS						The Project area is within the known range for the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Western red bat	*Lasiurus blossevillii*				SS						SPC	The Project area is at the eastern edge of the known range for the species (Smithsonian 2011). Heritage data included one occurrence of the species near Helper, Utah, in 1937 and one occurrence near Utah Lake in 1991 (UNHP 2012).
Western scrub-jay	*Aphelocoma californica*								NSS3			Breeding Bird Surveys and Christmas Bird Counts have identified occurrences of the species in Colorado and Utah (Gough et al. 1998). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10 SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS													
			Bureau of Land Management Sensitive Species[1]			**U.S. Forest Service Sensitive Species**			**State Sensitive Species**[2]			
Common Name	**Scientific Name**	**Endangered Species Act**	**Wyoming**	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	**Rationale and Nearest Known Location to the Project Area**
Western small-footed myotis	*Myotis ciliolabrum*								NSS4			The Project area is within the predicted range for the species (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
Western snowy plover	*Charadrius alexandrinus nivosus*			✓	SS					SC		UDWR has identified habitat for the species in the Uinta Basin and south of the Book Cliffs (UDWR 2005a). Heritage data included one occurrence of the species within 1 mile of Link U490 in 2005. Heritage data included one other occurrence near Pelican Lake in 1963 (CNHP 2011; UNHP 2012; WYNDD 2011).
Western spiny softshell	*Apalone spinifera hartwegi*								NSS4			The species may occur in river systems in northern Carbon County, Wyoming (WGFD 2010a). Heritage data did not include any occurrences of the species in the Project area (WYNDD 2011).
White-faced ibis	*Plegadis chihi*		✓	✓					NSS3			Important habitats for the species are within 4 miles of the Project area. Heritage data included occurrences of the species in the Project area in Wyoming and Colorado (CNHP 2011; UNHP 2012; WYNDD 2011).
White-tailed prairie dog	*Cynomys leucurus*	SPC	✓	✓	SS						SPC	The species is known to occur in the Project area. Heritage data included mapped colonies in Utah (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Whooping crane	*Grus americana*	E								FE/SE		The species is not known to occur in the Project area in Colorado (CNHP 2011). Heritage data included occurrences of the species in Utah in the 1970s, but the species is not suspected to presently inhabit Utah (UNHP 2012). According to the Colorado Action Plan, the species is not known to have breeding populations in Colorado (CDOW 2006). The Project area is outside the known range according to Birds of North America (2005). This species is found along the Platte River system in Nebraska and may be affected by water use in the Platte River watershed. Critical habitat is designated on a portion of the Platte River.
Willow flycatcher	*Empidonax traillii*								NSS4			Portions of the Project area are in potentially suitable breeding habitats for the species (Birds of North America 2005). Heritage data did not include any occurrences of the species in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).
Wood frog	*Lithobates sylvaticus*								NSS2	SC		The Project area is within the predicted range for the species (WGFD 2010a). However, Heritage data indicated the closest occurrence of the species is more than 40 miles away from alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-10
SPECIAL STATUS WILDLIFE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species			State Sensitive Species[2]			Rationale and Nearest Known Location to the Project Area
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Wyoming pocket gopher	*Thomomys clusius*	SPC	✓						NSS3			The Project area is within the known range and distribution of the species (WGFD 2010a). Heritage data included occurrences of the species in the Project area in Wyoming (WYNDD 2011).
Yellow-billed cuckoo	*Coccyzus americanus*	T	✓	✓	CN	SS	SS	SS	NSSU	SC	S-ESA	The species has been observed along various waterways in the Project area (Cerovski et al. 2004). Heritage data included occurrences of the species in and near Ouray National Wildlife Refuge (CNHP 2011; UNHP 2012; WYNDD 2011).

NOTES:

[1] Listed by at least one of the Bureau of Land Management districts

[2] Special status species in at least one state

Endangered Species Act
- C = Candidate
- E = Endangered
- EX = Experimental/nonessential
- T = Threatened
- P = Proposed
- SPC = Species of Concern

Bureau of Land Management
- ✓ = Sensitive species present in district
- CA = Conservation Agreement species
- CN = Candidate species
- SS = BLM Sensitive Species

U.S. Forest Service
- ✓ = Potential habitat within Forest
- o = Offsite, primarily relates to downstream fish
- MIS = Management Indicator Species
- SS = Sensitive Species with known habitat on Forest

Wyoming
- NSSU = Native Species Status Unknown
- NSS# = Native Species Status – the lower the number, the greater the conservation need;
- NSS1-NSS4 = Species of Greatest Conservation Need

Colorado
- FE = Federally Endangered
- FT = Federally Threatened
- SE = State Endangered
- ST = State Threatened
- SC = State Special Concern (not a statutory category)

Utah
- S-ESA = Sensitive as a result of being listed under the Endangered Species Act
- CS = Conservation Agreement Species
- SPC = Species of Conservation Concern

TABLE J-11 SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS													
Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species[1]**			**U.S. Forest Service Sensitive Species[2, 3]**			**State Sensitive Species[4]**			**Rationale**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Abert's squirrel	*Sciurus aberti*						MIS					Abert's squirrel is an MIS on the Manti-La Sal National Forest. Abert's squirrel is a State of Utah high-interest species, found only on the Monticello District in Utah (U.S. Forest Service 1986b). The Monticello Ranger District of the Manti-La Sal National Forest is not in the Project or study area.
Allen's big-eared bat	*Idionycteris phyllotis*				SS						SPC	The Project area is outside of the predicted range for the species. The species occurs in extreme southern Utah with range extending only into southern Grand County (Utah Division of Wildlife Resources [UDWR] 2005a).
Arizona toad	*Bufo microscaphus*				SS							The Project area is outside of the predicted range for the species. The species occurs in extreme southwestern Utah (UDWR 2005a).
Arkansas darter	*Etheostoma cragini*									ST		The species is not known to occur in the Project area (Colorado Natural Heritage Program [CNHP] 2011). The species occurs in the Arkansas River east of Canon City, Colorado (almost 200 miles from the Project area) (U.S. Geological Survey 2004).
Barrow's goldeneye	*Bucephala islandica*								NSS3			The species is not known to occur in the Project area (WYNDD 2011). Breeding Bird Survey and Christmas Bird Count have not identified the species as occurring in the Project area (Gough et al. 1998). The Project area includes minimal habitat for the species based on Wyoming Game and Fish Department (WGFD) range map (WGFD 2010a).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Bear Lake sculpin	*Cottus extensus*										SPC	The predicted range for the species is outside the Project area (UDWR 2005a).
Black Hills red-bellied snake	*Storeria occipitomaculata pahasapae*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Black-backed woodpecker	*Picoides arcticus*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Black-tailed prairie dog	*Cynomys ludovicianus*	SPC	✓							SC		The predicted range for the species is outside the Project area (Colorado Division of Wildlife [CDOW] 2006).
Boreal owl	*Aegolius funereus*					SS			NSS3			Potentially suitable habitat for the species occurs in the Project area, but the species is not known to occur in the Project area. The species is known to occur in the Uinta Mountains on the Ashley National Forest; suitable coniferous habitat does not occur on the portion of the Forest in the Project area. Heritage data included a single occurrence of the species in the Project area in Wyoming in 1989. However, the accuracy of the species identification has been questioned (Jorgensen 2013, Utah Natural Heritage Program [UNHP] 2012; Wyoming Natural Diversity Database [WYNDD] 2011).
Botta's pocket gopher	*Thomomys bottae rubidus*									SC		The species is not known to occur in the Project area (CNHP 2011). The species is known to occur in the eastern half of Colorado (CDOW 2006).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Burbot	*Lota lota*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Calico crayfish	*Orconectes immunis*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
California condor	*Gymnogyps californianus*	E/X										The species has not been observed in the Project area. The Project area is approximately 120 miles from Lake Powell and portions of the Colorado River where the species has been reintroduced. The species would not be affected by the Project.
Canyon treefrog	*Hyla arenicolor*			✓								The species is not known to occur in the Project area. All occurrences of the species are south of Interstate 70 (I-70) in Colorado, which is outside the Project area (CNHP 2011). The known range for the species is south of Moab and Grand Junction (CDOW 2006; UDWR 2005a).
Cave physa	*Physella spelunca*								NSSU			The species is not known to occur in the Project area (WYNDD 2011). The species is only known to inhabit a single cave near Lovell, Wyoming (more than 200 miles north of the Project area) (WGFD 2010a).
Central stoneroller	*Campostoma anomalum*								NSS4			The species is not known to occur in the Project area (WYNDD 2011). The species does not occur in Carbon or Sweetwater counties (WGFD 2010a).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Common chuckwalla	*Sauromalus ater*				SS							The species is not known to occur in the Project area (UNHP 2012). The species occurs in the Mojave Desert, which is outside of the Project area (UDWR 2005a).
Common garter snake	*Thamnophis sirtalis*									SC		UNHP data included one occurrence within 1 mile of alternative routes at Seely Pond, which is north of Mount Pleasant, Utah (Link U631) (UNHP 2012). CNHP data included no occurrences of the species in Colorado (where the species is listed) (CNHP 2011). The Project area in Colorado is outside the known range for the species (Stebbins 2003).
Common king snake	*Lampropeltis getula*									SC		The species is not known to occur in the Project area (CNHP 2011). The species range only extends into the extreme southwestern corner of Colorado (CDOW 2006).
Coral Pink Sand Dunes tiger beetle	*Cicindela albissima*				CN							The Project area is outside the predicted range for the species (UDWR 2005a). The species is only known know to occur in Kane County near Kanab, Utah (UDWR 2005a).
Couch's spadefoot	*Scaphiopus couchii*									SC		The species is not known to occur in the Project area (CNHP 2011). The species range only extends into the extreme southwestern corner of Colorado (AmphibiaWeb 2012).
Cylindrical papershell	*Anodontoides ferussacianus*								NSSU	SC		The species is not known to occur in the Project area (CNHP 2011; WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Dark kangaroo mouse	*Microdipodops megacephalus*				SS						SPC	The Project area is outside the known range for the species (Smithsonian 2011). The species is not known to occur in the Project area (UNHP 2012).
Desert iguana	*Dipsosaurus dorsalis*				SS							The species is not known to occur in the Project area (UNHP 2012). The species occurs in the Mojave Desert, which is outside of the Project area (UDWR 2005a).
Desert night lizard	*Xantusia vigilis*				SS							The species is not known to occur in the Project area (UNHP 2012). The species occurs in the Mojave Desert, which is outside of the Project area (UDWR 2005a).
Desert sucker	*Catostomus clarkii*				SS							The species is not known to occur in the Project area (UNHP 2012). The species occurs in the Virgin River system, which is outside of the Project area (UDWR 2005a).
Dickcissel	*Spiza americana*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Finescale dace	*Phoxinus neogaeus*								NSS2			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Fisher	*Martes pennanti*							SS	NSSU			The predicted range for the species is outside the Project area in Wyoming (WGFD 2010a). The species is believed to be extirpated from Utah. Only one occurrence of the fisher has been reported in Utah. In 1938, fisher tracks were photographed near Trial Lake in Summit County outside of the Project area. No other occurrences of the fisher in the state have been documented in Utah (UNHP 2012; WYNDD 2011).
Giant floater	*Pyganodon grandis*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Gila monster	*Heloderma suspectum*				SS							The species is not known to occur in the Project area (UNHP 2012). The species occurs in the Virgin River system, which is outside of the Project area (UDWR 2005a).
Goldeye	*Hiodon alosoides*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Great Basin silverspot butterfly	*Speyeria nokomis nokomis*			✓								The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).
Great Basin skink	*Plestiodon skiltonianus utahensis*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Great gray owl	*Strix nebulosa*					SS			NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
Great Plains earless lizard	*Holbrookia maculata maculata*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Great Plains narrowmouth toad	*Gastrophryne olivacea*									SC		The predicted range for the species is outside the Project area (AmphibiaWeb 2012). The species is not known to occur in the Project area (CNHP 2011)
Great Plains toad	*Bufo cognatus*				SS				NSSU		SPC	The species is believed to be extinct in Utah (Bosworth 2003) and is not known to occur in western Colorado or western Wyoming (CNHP 2011; UNHP 2012; WYNDD 2011).
Greenback cutthroat trout	*Oncorhynchus clarkii stomias*	T								FT/ST		The species was discovered in Manti-La Sal National Forest in 2009 in Beaver Creek, a tributary to La Sal Creek (UDWR 2009a). Beaver Creek is on the southern end of the forest unit outside the Project area. Heritage data did not include any known occurrences of the species in the Project area.
Grizzly bear	*Ursus arctos horribilis*	T								FT/SE	S-ESA	The predicted range for the species does not extend south of Yellowstone National Park (Smithsonian 2011). Heritage data included one occurrence from the 1870 and one occurrence from the early 1900s near alternative routes (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Gunnison sage-grouse	*Centrocercus minimus*	P		X	CN					SC	S-ESA/ CS	All occurrences of the species included in Heritage data were south of I-70. The Project area is north of I-70 and the closest occurrence (brood/nesting habitat) is 10 miles southeast of the southern-most alternative routes. All occupied habitat and occurrences are south of the Colorado River. The Project area is north of the Colorado River (CNHP 2011; UNHP 2012).
Gunnison's prairie dog	*Cynomys gunnisoni*				SS						SPC	The predicted range for the species is outside the Project area (UDWR 2005a). All occurrences of the species are south of I-70 (UNHP 2012). Alternative routes are north of I-70 and are approximately 28 miles from the closest occurrence.
Harlequin duck	*Histrionicus histrionicus*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Hayden's shrew	*Sorex haydeni*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Hidden Forest Uinta chipmunk	*Neotamias umbrinus nevadensis*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Hispid pocket mouse	*Chaetodipus hispidus*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Hornyhead chub	*Nocomis biguttatus*		✓						NSS2			The species is not known to occur in the Project area (UNHP 2012). The species is believed to be extinct in the Platte River system. The species is found no farther west than around Wheatland, Wyoming (Miller et al. 2005).
Idaho pocket gopher	*Thomomys idahoensis*		✓						NSS3			The predicted range for the species is outside the Project area (WGFD 2010b; Smithsonian 2011).
Jackson Lake springsnail	*Pyrgulopsis robusta*								NSSU			The predicted range for the species is outside the Project area in northwestern Wyoming (WGFD 2010a).
Kendall Warm Springs dace	*Rhinichthys osculus thermalis*	E										The predicted range for the species is outside the Project area. The species occurs in Sublette County, Wyoming (WGFD 2010a).
Lake chub	*Couesius plumbeus*									SE		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011). The species may occur in upper Green River above Flaming Gorge. The species does not occur in Colorado River watersheds in the Project area.
Least weasel	*Mustela nivalis*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Lesser prairie-chicken	*Tympanuchus pallidicinctus*									ST		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to inhabit areas west of the Rocky Mountains.

TABLE J-11 SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS												
Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species[1]**			**U.S. Forest Service Sensitive Species[2, 3]**			**State Sensitive Species[4]**			**Rationale**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Massasauga rattlesnake	*Sistrurus catenatus*									SC		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011). The species occurs in southern Colorado.
Mojave rattlesnake	*Crotalus scutulatus*				SS							The species is not known to occur in the Project area (UNHP 2012). The species occurs in the Mojave Desert, which is outside of the Project area.
Ninemile pyrg	*Pyrgulopsis nonaria*										SPC	The predicted range for the species is outside the Project area. The species is only known to occur in springs near Nine Mile Reservoir south of Sterling, Utah (approximately 30 miles from the Project area) (Oliver and Bosworth 1999).
Northern cricket frog	*Acris crepitans*									SC		The species is not known to occur in the Project area (CNHP 2011).
Northern many-lined skink	*Plestiodon multivirgatus multivirgatus*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Northern myotis	*Myotis septentrionalis*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Northern pocket gopher	*Thomomys talpoides macrotis*									SC		The species is not known to occur in the Project area (CNHP 2011). Colorado GAP data indicated that the Project area is outside the range for the species.

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Northern pygmy-owl	*Glaucidium gnoma californicum*								NSSU			The predicted range for the species is outside the Project area (Birds of North America 2005; WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Northern redbelly dace	*Phoxinus eos*									SE		The predicted range for the species is outside the Project area (U.S. Geological Survey 2004). The species is not known to occur in the Project area (CNHP 2011).
Northern rubber boa	*Charina bottae*								NSS3			The predicted range for the species is outside the Project area in Wyoming (WYNDD 2011). Utah Heritage data included three occurrences of the species near the western end of the Project area in Utah (UNHP 2012).
Ornate box turtle	*Terrapene ornata ornata*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Pearl dace	*Margariscus margarita*								NSS2			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Pilose crayfish	*Pacifastacus gambelii*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Plains garter snake	*Thamnophis radix*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-11 SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS													
Common Name	**Scientific Name**	**Endangered Species Act**	**Bureau of Land Management Sensitive Species[1]**			**U.S. Forest Service Sensitive Species[2, 3]**			**State Sensitive Species[4]**			**Rationale**
			Wyoming	**Colorado**	**Utah**	**Ashley National Forest**	**Manti-La Sal National Forest**	**Uinta National Forest**	**Wyoming**	**Colorado**	**Utah**	
Plains harvest mouse	*Reithrodontomys montanus*								NSS3			The predicted range for the species is outside the Project area (Smithsonian 2011; WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Plains hog-nosed snake	*Heterodon nasicus*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Plains leopard frog	*Rana blairi*									SC		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).
Plains minnow	*Hybognathus placitus*								NSS3	SE		The predicted range for the species is outside the Project area. The species is not known to occur in the Project area (CNHP 2011; WYNDD 2011).
Plains pocket gopher	*Geomys bursarius*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Plains pocket mouse	*Perognathus flavescens*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Plains sharp-tailed grouse	*Tympanuchus phasianellus jamesii*									SE		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Plains spadefoot	*Spea bombifrons*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Prairie lizard	*Sceloporus consobrinus*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Prairie racerunner	*Aspidoscelis sexlineatus viridis*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Preble's shrew	*Sorex preblei*				SS				NSS3			The predicted range for the species is outside the Project area (Smithsonian 2011; WGFD 2010a). The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T								FT/ST		The predicted range for the species is outside the Project area (Smithsonian 2011; WGFD 2010a). The species is not known to occur in the Project area (CNHP 2011; WYNDD 2011).
Pygmy shrew	*Sorex hoyi*								NSS2			The predicted range for the species is outside the Project area. (Smithsonian 2011). The species is not known to occur in the Project area (WYNDD 2011).
Red-sided garter snake	*Thamnophis sirtalis parietalis*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Rio Grande chub	*Gila pandora*									SC		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).
Rio Grande cutthroat trout	*Oncorhynchus clarkii virginalis*	C								SC		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).
Rio Grande sucker	*Catostomus plebeius*									SE		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).
Rocky Mountain capshell	*Acroloxus coloradensis*									SC		The predicted range for the species is outside the Project area (CDOW 2006). The species is not known to occur in the Project area (CNHP 2011).
Roundtail horned lizard	*Phrynosoma modestum*									SC		The species is not known to occur in the Project area (CNHP 2011).
Sauger	*Sander canadensis*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Shovelnose sturgeon	*Scaphirhynchus platorynchus*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Sidewinder	*Crotalus cerastes*				SS							The predicted range for the species is outside the Project area (UDWR 2005a). The species is not known to occur in the Project area (UNHP 2012).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Silky pocket mouse	*Perognathus flavus*				SS				NSS3			The predicted range for the species is outside the Project area (Smithsonian 2011; WGFD 2010a). The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).
Snake River cutthroat trout	*Oncorhynchus clarkii spp.*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Southern redbelly dace	*Phoxinus erythrogaster*									SE		The species is not known to occur in the Project area (CNHP 2011). The species occurs in the Arkansas River in the eastern half of Colorado.
Speckled rattlesnake	*Crotalus mitchellii*				SS							The predicted range for the species is outside the Project area (UDWR 2005a). The species is not known to occur in the Project area (UNHP 2012).
Spotted ground squirrel	*Spermophilus spilosoma*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Sturgeon chub	*Macrhybopsis gelida*								NSS1			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Swift fox	*Vulpes velox*		✓						NSS4	SC		The predicted range for the species is outside the Project area (Smithsonian 2011; Sovada et al. 2011; WGFD 2010a). The species is not known to occur in the Project area (CNHP 2011; UNHP 2012; WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Texas blind snake	*Leptotyphlops dulcis*									SC		The species is not known to occur in the Project area (CNHP 2011). The species is only known to occur in extreme southeastern Colorado (CDOW 2006).
Texas horned lizard	*Phrynosoma cornutum*									SC		The species is not known to occur in the Project area (CNHP 2011). The species is known to occur in southeastern Colorado (CDOW 2006).
Triploid checkered whiptail	*Cnemidophorus neotesselatus*									SC		The species is not known to occur in the Project area (CNHP 2011). The species is known to occur in southeastern Colorado (CDOW 2006).
Upland sandpiper	*Bartramia longicauda*								NSSU			The species is not known to occur in the Project area (WYNDD 2011).
Utah physa	*Physella utahensis*										SPC	The species was historically found in Utah Lake, but is believed to be extirpated. The only existing populations in Utah are in Box Elder County (Oliver and Bosworth 1999).
Utah prairie dog	*Cynomys parvidens*	T									S-ESA	The established range for the species is outside the Project area. Historic records indicate populations as far north as Sanpete County near Gunnison, which is approximately 30 miles from alternative routes (UDWR 2005a). The species is not known to occur in the Project area (UNHP 2012).
Valley garter snake	*Thamnophis sirtalis fitchi*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Virgin River spinedace	*Lepidomeda mollispinis mollispinis*				CA							The predicted range for the species is outside the Project area (UNHP 2012).
Water vole	*Microtus richardsoni*								NSS3			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Western banded gecko	*Coleonyx variegatus*				SS							The predicted range for the species is outside the Project area (UDWR 2005a).
Western painted turtle	*Chrysemys picta bellii*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Western pearlshell	*Margaritifera falcata*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Western silvery minnow	*Hybognathus argyritis*								NSS2			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).
Western threadsnake	*Leptotyphlops humilis*				SS							The predicted range for the species is outside the Project area (UDWR 2005a).
White heel splitter	*Lasmigona complanata*								NSSU			The predicted range for the species is outside the Project area (WGFD 2010a). The species is not known to occur in the Project area (WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
White-tailed ptarmigan	*Lagopus leucura*					MIS						An introduced population of the species exists in the northern portion of Ashley National Forest, west of Flaming Gorge. However, the predicted range for the species is outside the Project area (Birds of North America 2005). The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011). Additionally, the Project area does not occur in high alpine meadows that are typical of white-tailed ptarmigan habitat (Birds of North America 2005).
Wyoming toad	*Anaxyrus baxteri*	E							NSS1			The predicted range for the species is outside the Project area (WGFD 2010b). The species is not known to occur in the Project area (WYNDD 2011).
Yellow mud turtle	*Kinosternon flavescens*									SC		The species is not known to occur in the Project area (CNHP 2011). The species range does not extend into western Colorado (CDOW 2006).
Yellow-pine chipmunk	*Neotamias amoenus*								NSS4			The predicted range for the species is outside the Project area (WGFD 2010b). The species is not known to occur in the Project area (WYNDD 2011).
Yellowstone cutthroat trout	*Oncorhynchus clarkii bouvieri*				CA				NSS2			The predicted range for the species is outside the Project area (UDWR 2005a; WGFD 2010c). The species is not known to occur in the Project area (UNHP 2012; WYNDD 2011).

TABLE J-11
SPECIAL STATUS WILDLIFE SPECIES NOT CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Endangered Species Act	Bureau of Land Management Sensitive Species[1]			U.S. Forest Service Sensitive Species[2, 3]			State Sensitive Species[4]			Rationale
			Wyoming	Colorado	Utah	Ashley National Forest	Manti-La Sal National Forest	Uinta National Forest	Wyoming	Colorado	Utah	
Zebra-tailed lizard	*Callisaurus draconoides*				SS							The predicted range for the species is outside the Project area (UDWR 2005a).

NOTES:
[1] Listed by at least one of the Bureau of Land Management districts
[2] Known habitat in at least one Forest
[3] Management Indicator Species on at least one forest, but no known habitat
[4] Special status species in at least one state

Endangered Species Act
E = Endangered
T = Threatened
C = Candidate
P = Proposed
SPC = Species of Concern

Wyoming
NSSU = Native Species Status Unknown
NSS# = Native Species Status – the lower the number, the greater the conservation need;
NSS1-NSS4 = Species of Greatest Conservation Need

Bureau of Land Management
✓ = Sensitive species present in district
CA = Conservation Agreement species
CN = Candidate species
SS = BLM Sensitive Species

Colorado
FE = Federally Endangered
FT = Federally Threatened
SE = State Endangered
ST = State Threatened
SC = State Special Concern (not a statutory category)

U.S. Forest Service
SS = Sensitive Species with known habitat on Forest
o = Offsite, primarily relates to downstream fish
MIS = Management Indicator Species

Utah
S-ESA = Sensitive as a result of being listed under the Endangered Species Act
CS = Conservation Agreement Species
SPC = Species of Conservation Concern

Distribution and Habitat Requirements

The known spatial distribution of Barneby ridge-cress has not changed since completion of the 1993 Recovery Plan. Barneby ridge-cress is known from one population with three separate stands endemic to thin limestone caps on ridge lines near Indian Canyon approximately 3 miles south and southwest of the town of Duchesne, Utah (FWS 2011a).

No new information concerning the demography of Barneby ridge-cress is available since FWS listed the species in 1990 and developed the Recovery Plan in 1993. In the Recovery Plan, FWS estimated the species' population at 5,000 individuals on about 500 acres of suitable habitat located entirely on the Ute Indian Tribe's Uintah and Ouray Reservation. Comprehensive surveys of Barneby ridge-cress were conducted in 2010 and 2011. Approximately two-thirds of known suitable habitat was surveyed, and 4,082 plants were counted. By extrapolating out to the rest of the known suitable habitat, the total population for the species was estimated to be approximately 6,000 individuals across approximately 500 acres of suitable habitat (FWS 2011a).

The species is a rare local endemic occurring solely on Tribal lands and access to the species and its habitat is limited. The species' plant community is comprised of small-statured shrubs and semi-woody cushion plants on infrequently occurring limestone barrens in broader woodlands dominated by Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*). The limestone substrate where Barneby ridge-cress grows has the appearance of highly weathered concrete. This particular limestone barren is an unnamed geological stratum of the geologic Uinta Formation. The species is restricted to that stratum. Barneby ridge-cress is an edaphically (soil related) controlled endemic of the Uinta Basin (Welsh et al. 2003).

Primary Threats to Survival

The primary threat to the survival of Barneby ridge-cress is damage due to oil and gas exploration. Ridge-cress habitat is underlain by petroleum deposits with current and potential future development, and the potential for significant loss from petroleum resource development is high. The listing of the species as endangered has made huge strides in protecting its habitat from oil and gas development activities (FWS 1993). The recovery plan cites Barneby ridge-cress as being threatened by vehicular impacts due to its narrow distribution along ridgelines. Since the species' listing in 1990, recreational (trail riding and hunting related) off-highway vehicle (OHV) use in the species' occupied habitat has been very light due in large part to Tribal control and active policing to prevent trespass. Therefore, FWS considers the threat of recreational OHV to be low throughout the species' range. Listing under the ESA provides the Tribe an increased awareness of the species' vulnerability and provides the ability to further protect the species by reinforcing laws and regulations pertaining to violations of trespass laws (FWS 2011a). Livestock grazing was reported as a concern in the recovery plan for adverse impact on Barneby ridge-cress and its habitat. However, grazing is no longer allowed in Barneby ridge-cress habitat. Thus, although we do not know how much livestock grazing affected the species historically, we no longer consider livestock grazing to be a threat (FWS 2011a).

Occurrence in the Project Area

The single known population of Barneby ridge-cress is on the Uintah and Ouray Indian Reservation near the city of Duchesne, Utah. The location is near Indian Creek and Indian Canyon, approximately 3 miles south of Starvation Reservoir (FWS 1993). The entirety of this population is approximately 3 miles from the junction of Links U402, U430, and U431.

Cisco Milkvetch (*Astragalus sabulosus* var. *sabulosus*) – FWS: Petitioned; BLM: Utah

Regulatory Status

The full species (*Astragalus sabulosus*) was considered a category 2 candidate for listing in 1993 (58 FR 51152); however, the species was never listed. In 2009, the species was petitioned for listing and in their 90-day finding, the FWS determined listing may be warranted (74 FR 41656). With that determination, the FWS began a status review to determine if listing is warranted. If it is determined that listing is warranted, the species will become a candidate.

Taxonomy and Life History

The Cisco milkvetch is a member of the pea family (*Fabaceae*) (Utah Native Plant Society [UNPS] 2012). The species was split into two varieties (*sabulosus* and *vehiculus*) in 1998 (Franklin 2005).

Cisco milkvetch have coarse leaves and pods with a stiff papery to leathery texture. Flowers are yellowish to whitish and approximately 1.25 inches in length. The variety *vehiculus* has flowers that are smaller and less yellow. The variety flowers from late March through early May (UNPS 2012).

Distribution and Habitat Requirements

This variety of Cisco milkvetch is endemic to the Grand River Valley in Grand County, Utah. It is only known to occur in the 20 miles between Cisco Mesa and Whipsaw Flat (Franklin 2005; UNPS 2012). The species is known from five locations occupying a total area of approximately 800 acres (74 FR 41656). Four extant populations of this variety are known from surveys conducted in 1995 and 1997. Two populations are in Whipsaw Flat south of Thompson, one population is along Bread Knolls, and one population approximately 4 miles southwest of Cisco (Utah Natural Heritage PRogram [UNHP] 2012). The Cisco milkvetch occurs on the Mancos Shale Formation in salt desert shrub communities from 4,250 to 5,250 feet (UNPS 2012). The species is highly dependent on sufficient moisture at the right time for seeds to germinate (Franklin 2005).

Primary Threats to Survival

Potential threats include off-road vehicles, energy development, oil and gas development, uranium mining, and natural gas development. In addition to the direct impacts these developments may have, the vibrations created may have an impact on the soils and plants in the vicinity of roads and developments (74 FR 41656).

Occurrence in the Project Area

All known occurrences of this variety lie within 4 miles of Link U490. Two occurrences are within 1-mile of Link U490. One is along Interstate 70 (I-70) approximately 2 miles west of Cisco. This occurrence is based on a museum collection from 1890, but surveys conducted in 1988 and 1995 failed to find any Cisco milkvetch present. The second occurrence is 4 miles southwest of Cisco along I-70. Surveys conducted in 1997 found 210 individuals occupying 5 acres (UNHP 2012).

Clay Phacelia (*Phacelia argillacea*) – FWS: Endangered

Regulatory Status

Clay phacelia was first proposed for listing on June 16, 1976, along with 1,700 other vascular plant species (41 FR 24523). On June 28, 1978, the FWS published a final rule listing clay phacelia as an endangered species (43 FR 44810). No critical habitat has been designated.

The recovery plan for clay phacelia was published in 1982 (FWS 1982). The objective of the plan is to establish a self-sustaining population of 2,000 to 3,000 individuals on 120 acres of protected habitat and possibly establish at least one new population. Once the objective is achieved, clay phacelia can possibly be downlisted, depending on the nature of the existing threats to the species. The FWS is currently re-evaluating recovery goals for clay phacelia to create more meaningful, measurable, and achievable recovery criteria (FWS et al. 2013).

Taxonomy and Life History

Clay phacelia is a member of the waterleaf family (*Hydrophyllaceae*) (UDWR 2005b). It was first collected in 1883 by Marcus E. Jones at Pleasant Valley Junction in Wasatch County, Utah and again in 1894 at Clear Creek near Soldier Summit in Utah County in 1894. However, Jones failed to recognize it as a new species. It was rediscovered in 1971 by N.D. Atwood who identified it as the closely related glandular phacelia (*Phacelia glandulosa*). However, on further examination, substantial differences were seen in the Utah populations and they were thus given unique species status (FWS 1982).

Clay phacelia is a winter annual that reaches heights of 12 inches. The stems are finely pubescent with pinnate leaves. The inflorescence is a compound cyme with blue to violet flowers. It germinates in the fall if there is significant moisture, but can germinate in the spring if conditions in fall are not wet enough. Flowering takes place in late May to early June and fruits are produced from mid-June to September and persist up to 2 weeks. Each fruit can contain up to four seeds. Pollen is primarily spread by wind and possibly bees (FWS 1982).

Dispersed seeds lodge in cracks or crevices on the shale-covered slopes where they germinate when conditions are suitable. Basal rosettes are formed by early to mid-October and they then over-winter growing slowly underneath the snow pack. Where they occur, the extant populations of clay phacelia cover only 3 to 5 percent of the slope's surface in scattered patches (FWS 1982). Overall vegetative cover is generally around 10 percent in habitat for the species (NatureServe 2013).

Distribution and Habitat Requirements

Historically, clay phacelia was known only from the two locations recorded by Jones in Pleasant Valley and Clear Creek. However, later searches were only able to locate the remaining population at Clear Creek near Soldier Summit in Utah County. The Pleasant Valley population remains to be rediscovered or has been eradicated since its initial discovery (UDWR 2005b).

In 1977, only nine plants were known to exist. This may have been occasioned by the construction of a railroad line directly through the population. By 1980 only four plants were left at the site due to trampling by sheep. The population was fenced off and the land was purchased by The Nature Conservancy. In 1989, a search turned up two subpopulations on open slopes approximately 5 miles west-northwest of the Clear Creek site. Today the species is stable but the remaining population totals only about 200 individuals. Clay phacelia is only found in the Spanish Fork Canyon of Utah (FWS 1982).

Clay phacelia grows on steep slopes in sparsely populated juniper-pinyon and mountain brush communities (Welsh et al. 1975). The slopes are very steep; a 70 percent grade at the largest population. The substrate is described as shaley clay colluviums of the Green River Formation (Atwood 1975). As a result, the loose shale on the surface is continually sloughing down the face of the slopes. The majority of the plants grow on slopes facing west or southeast, at elevations between 6,000 and 7,000 feet. Populations are not likely to exist at elevations greater than 8,000 feet above mean sea level (UNPS 1989). Habitat areas are free of snow at least once during the winter and are typically dry in early spring. Associated vegetation includes skunkbush sumac (*Rush trilobata*) and Juneberry (*Amerlanchier alnifolia*) with a degraded sagebrush steppe at the base of the slope (FWS 1982). Overall, vegetation cover is generally around 10 percent in habitat for the species (NatureServe 2013).

Suitable habitat for clay phacelia has been modeled in the Project area by the USFS in the vicinity of known locations and a reintroduction sites. The habitat model for the species uses the parameters of slope, aspect, elevation, vegetative cover, geology, precipitation, and soil pH reported in literature for the species.

Primary Threats to Survival

The primary threat to the survival of clay phacelia is the vulnerability that results from such a drastically small population size. In populations with less than 1,000 individuals, demographic uncertainties can play a significant role in extinction probability. The species is a winter annual with habitat that faces restriction by climactic changes and soil factors. Destruction of portions of the population and modification of potential habitat has severely jeopardized clay phacelia. The Denver and Rio Grande Western Railroad and its associated maintenance road bisect the only known population. The railroad company is aware of the plant and has a positive attitude toward its protection. In addition, sheep moving through the area have trampled some of the plants and squirrels have caused considerable damage by grazing on portions of the plant (FWS 1982).

Occurrence in the Project Area

Clay phacelia is known to occur in the western portion of the Project area in Utah County. It has a population estimated at less than 200 individuals, all of which are known to occur in Spanish Fork Canyon of Utah. The species has been located in the vicinity of Tucker and down-canyon near Mill Fork (UDWR 2005b). Known occurrences of the species are in the Project area along Links U539 and U530. Twelve reintroduction sites for clay phacelia are in Spanish Fork Canyon, and the USGS has collected and cultivated clay phacelia seeds in a greenhouse for use in reintroduction of the species at four of these sites. The USFS has documented emergence of plants at three of the four reintroduction sites; however, only one individual has been observed as having completed the biennial life cycle and successfully producing seeds.

Clay Reed-mustard (*Schoenocrambe argillacea*) – FWS: Threatened

Regulatory Status

Clay reed-mustard was first listed as a candidate to add to the list of endangered species on December 15, 1980 (45 FR 82480). Beginning on October 13, 1983 and each successive year, the FWS made 1-year findings that the petition to list the species was warranted but precluded by other listing actions of higher priority. On April 12, 1991, the FWS published a proposed rule proposing to list clay reed-mustard as an endangered species (56 FR 14910). Surveys for the species conducted after the proposal date revealed significant additional populations of the species, possibly twice as large as previously thought. Taking the new survey results into account, the FWS found it more appropriate to list clay reed-mustard as a threatened species (57 FR 1398). No critical habitat has been designated because the benefits of publicizing critical habitat are outweighed by the added dangers (57 FR 1398). The FWS initiated a 5-year review on October 6, 2008 (73 FR 58261). The FWS concluded the 5-year review and published the summary and evaluation for the species on July 11, 2011. The FWS concluded that clay reed-mustard should retain its classification as a threatened species throughout its range, primarily due to threats associated with oil and gas development.

The recovery plan for the Utah reed-mustards was published in 1994. The goal of the plan is to delist clay reed-mustard. Delisting criteria described in the plan includes: (1) discovering or establishing a minimum of ten separate populations with 2,000 or more individuals per population; and (2) documenting or establishing formal land management designations that would provide for long-term protection on undisturbed habitat for the above ten populations (FWS 1994a).

Taxonomy and Life History

Clay reed-mustard, also known as clay *Schoenocrambe* and the Uinta Basin plainsmustard (UDWR 2005b), was discovered by Duane Atwood in 1976 on a site in the southern portion of the Uinta Basin in Uintah County, Utah, approximately 1 mile from the discovery site of the shrubby reed-mustard (*Schoenocrambe suffrutescens*). It was originally described as *Thelypodiopsis argillacea*. In 1982, the genus was changed to *Schoenocrambe* by Rollins after evaluating the cruciferous genera that also includes the endangered shrubby reed-mustard (*Schoenocrambe suffretescens*) and Barneby reed-mustard (*Schoenocrambe barnebyi*) (FWS 1994a).

Clay reed-mustard is a perennial, herbaceous plant that reaches 1 foot in height. It has a wood root crown. It has alternate leaves arranged on the stem and are connected without a petiole. The flowers are pale lavender to white with prominent purple veins and grow to half an inch in length in a raceme of 3 to 20 flowers at the end of the plant's leafy stem (FWS 1994a).

All three species of reed-mustards flower from April to May with fruit appearing May to June. Reproduction is sexual and pollination is aided by insects. Little is known about the long-term population dynamics, disease, parasitism, effect of grazing, competition, and viability of any of the species (FWS 1994a).

Distribution and Habitat Requirements

Six populations of clay reed-mustard are known within a 19-mile range from the west side of the Green River to the east side of Willow Creek in southwestern Uintah County, Utah. One population is known from the eastern slopes of Big Pack Mountain; one in Broome Canyon to the east; a third is along the west slopes of Wild Horse Bench; a fourth is immediately north in Long Bottom; a fifth is immediately north of Long Bottom called King's Bottom; and the sixth population is along the slopes of the canyons about Ray's Bottom, on the west side of the Green River. The total population is estimated from approximately 5,300 to 7,450 plants (FWS 2011e).

Clay reed-mustard grows in mixed salt desert shrub communities, generally on north-facing slopes composed of clay soils rich with gypsum overlain with sandstone talus. The sandstone talus of the clay reed-mustard is derived from a mixture of shales and sandstones from the zone of contact between the Uinta and Green River geologic formations. Populations grown on protected sites are generally more robust than those that grow on exposed surfaces (FWS 1994a). Associated vegetation includes crispleaf buckwheat (*Eriogonum corymbosum*), Torrey's jointfir (*Ephedra torreyana*), shadscale, valley saltbush, and saline wildrye (UDWR 2005b).

Primary Threats to Survival

Primary threats to clay reed-mustard include habitat disruption associated with energy development and off-road vehicle use. Most known populations are on federal lands that are leased for oil and gas energy reserves and petroleum deposits that are being developed in adjacent habitats. In addition, the entire range of the species is underlain by oil shale (FWS 1994a). Most sites of clay reed-mustard contain less than 200 individuals, which increases the chance that populations may be lost as a result of natural variation in population numbers and less genetic diversity thus making the populations more susceptible to natural disasters (57 FR 1398-1403).

Occurrence in the Project Area

Clay reed-mustard inhabits areas in western Uintah County, Utah. There are six distinct populations. Two alternative routes (Links U117 and U400) cross a portion of the King's Bottom population and are within 1 mile of the Ray's Bottom population (FWS 2011e).

Deseret Milkvetch (*Astragalus desereticus*) – FWS: Threatened

Regulatory Status

Deseret milkvetch was first addressed in the July 1, 1975, indicating that the species was probably extinct (40 FR 27823). On June 16, 1976, the FWS published a proposed rule to designate 1,700 plants, including Deseret milk-vetch, as endangered species (41 FR 24523). On December 10, 1979, the FWS withdrew the proposal, because it was not finalized within the 2-year time limit from the initial publication in the *Federal Register* (44 FR 70796). In the December 15, 1980 notice of review, Deseret milkvetch was listed as a category 1 species, indicating that sufficient information on biological vulnerability and threats to support preparation of listing proposals was available. It also was noted that it was believed that Deseret milkvetch may have recently become extinct. In 1981, a population was discovered that led to a relisting as a Category 2 candidate, for which data was not sufficient to support issuance of a listing proposal (48 FR 53640). Surveys in 1990 and 1991 resulted in additional information that reinstated the Category 1 candidate assignment in 1993 (58 FR 51144). The species was eventually listed as a threatened species on October 20, 1999 (64 FR 56590).

On January 25, 2007, an advanced notice of proposed rulemaking was released announcing the intent to remove Deseret milkvetch from the federal list of endangered and threatened plants. Proposed delisting is occurring because threats to the species at the time of listing are not as significant as earlier believed and are managed such that the species is not likely to become in danger of extinction throughout all or a significant portion of its range in the foreseeable future (72 FR 3379). A 5-year review was initiated on April 18, 2007 (72 FR 19549). As of 2011, no critical habitat has been designated, no recovery plan has been published, and no official delisting has occurred for Deseret milkvetch. FWS did not find any threats to the species during the 5-year review process and therefore recommended delisting the species. However the FWS also noted that a single project, such as a major transmission line project, in or affecting occupied habitat could elevate the threats to the species to the point that it will not be able to be delisted (FWS 2011f).

Taxonomy and Life History

Deseret milkvetch is a member of the legume family (*Leguminosae, Fabaceae*). It was first collected near Indianola, Utah in 1893 and 1909 by Marcus E. Jones and Ivar Tidestrom, respectively. It was not described as a separate species until 1964 by Rupert Barneby using specimens from various herbaria. At that time, effort was made to find the original populations from which Jones and Tidestrom collected specimens, but they were unsuccessful. The species was believed to be extinct until found near Birdseye, Utah in 1981. This population is the only current known occurrence (64 FR 56590).

Deseret milkvetch is a perennial, herbaceous species that is nearly stemless and can reach a height of 6 inches. The flowers are typical of the bean family and are white with a purple tip on the keel. The seed pods are just under an inch long, hairy, and contain 14 to 16 seeds (64 FR 56590). Because the milkvetch is a short-lived perennial, it has no means of vegetative propagation. The survival of the species depends on successful reproduction and germination of seeds annually. Growth and reproduction begin after the annual snow melt, by mid-April (NatureServe 2008a). Flowering and seed setting occurs in May and June. Like most species in the pea family, the flower of Deseret milkvetch is primarily designed to be pollinated by bees. The seeds lay dormant over the winter and germinate in the spring when favorable conditions return (64 FR 56590).

Distribution and Habitat Requirements

Deseret milkvetch is endemic to central Utah and known from only one location on the east side of the Thistle Creek Valley near the town of Birdseye in Utah County (UDWR 2005b). The population consists of an estimated 86,775 to 98,818 individuals growing on 146 acres on both state and privately owned land (FWS 2011f). The known location of Deseret milkvetch is in an open to sparse juniper-sagebrush community on open, steep, naturally disturbed south and west (rarely north) facing slopes of sandy-gravelly soils of the Moroni Formation (UDWR 2005b). On west-facing road cuts, the individuals tend to grow larger. The vegetation is dominated by pinyon pine and Utah juniper. Other associated vegetation includes sagebrush, scrub oak, Indian ricegrass, antelope bitterbrush, and plateau beardtongue (*Penstemon scariosus*) (64 FR 56590).

Primary Threats to Survival

The primary threats to the survival of Deseret milkvetch are residential development, highway widening, and livestock grazing and trampling. The development of real estate adjacent to the single known population poses several threats. The construction could eliminate habitat or interfere with the reproductive success of the species. Increased real estate development also would increase recreational activities that could ultimately lead to decreased milk-vetch habitat. In addition, the limited population size makes the species more susceptible to dangers resulting from limited genetic diversity (64 FR 56590).

Although the distribution is still small and restricted, evidence shows that there has been little to no habitat disturbance in recent years and that there are no foreseeable potential threats to the State-owned portion of the species' range. Only one house has been built on private property within the species' range, affecting less than 1 percent of occupied habitat. As of 2006, there were no plans for highway widening to occur within the range of the species. Livestock grazing is being managed by the UDWR, reducing the threat of trampling of vital habitat (72 FR 3379).

Occurrence in the Project Area

Deseret milkvetch is known to occur in the Project area in Utah County. It has been identified on the east side of Thistle Creek Valley near the town of Birdseye (UDWR 2005b). Link U621 is within 1 mile of the known Deseret milkvetch population.

Jones' Cycladenia (*Cycladenia humilis* var. *jonesii*)–FWS: Threatened

Regulatory Status

Jones' cycladenia was proposed for listing on January 10, 1985 (50 FR 1247-1251). On May 5, 1986, the FWS listed Jones' cycladenia as a threatened species (51 FR 16526-16530).

Critical habitat has not been designated for Jones' cycladenia. FWS has not finalized or approved a comprehensive recovery plan for the species but a recovery outline was published in December 2008 (FWS 2008c). The recovery outline is intended to guide recovery efforts and inform consultation and permitting activities until a comprehensive recovery plan for the species has been finalized and approved.

Taxonomy and Life History

The genus *Cycladenia* consists of one species *Cycladenia humilis* treated as having two varieties in California (var. *humilis*, var. *venusta*) (Hickman 1993) and a third variety, Jones' cycladenia (*Cycladenia humilis* var. *jonesii*) found in Utah and Arizona. The closest taxonomic relative to Jones' cycladenia is thought to be *Mandevilla*, a neotropical genus (FWS 2008c).

Jones’ cycladenia is a long-lived herbaceous perennial in the Dogbane family (*Apocynaceae*) that grows 4 to 6 inches (10 to 15 centimeters) tall. It has orbicular wide-oval or elliptical leaves and produces pink or rose-colored, trumpet-shaped showers that resemble small morning glories from mid-April to early June (FWS 2008c).

Jones’ cycladenia is rhizomatous (FWS 2008c). It overwinters as subterranean rhizomes (roots). Several to a hundred above-ground stems (or ramets) could be a single genetic individual (or genet) (FWS 2008c). Depending on the location, flowering and fruiting occurs from mid-May through June.

Little to no information about age of individual plants, years to reproductive adulthood, survivorship, mortality, or fecundity rates is available. Fruit and seed production is believed extremely limited (FWS 2008c). Its possible pollinators may have been lost or may be migratory and appear episodically (FWS 2008c). In 1992, enzyme electrophoresis research determined that clones do not extend more than 10 meters in any direction. Heterozygosity was low, which suggested inbreeding or population sub-structuring. Genetic variation was great between separated populations (FWS 2008c).

Distribution and Habitat Requirements

Jones’ cycladenia occurs between 4,390 to 6,000 feet (1,338 to 1,829 meters) in plant communities of mixed desert scrub, juniper, or wild buckwheat-Mormon tea. It is found on gypsiferous, saline soils of Cutler, Summerville, and Chinle Formations (FWS 2008c). Populations are found on all aspects and on slopes that range from moderate to steep (FWS 2008d).

Primary Threats to Survival

At the time of listing, Jones’ cycladenia was known from three sites with low numbers. It was thought to be a Tertiary relict, poorly adapted to the present-day arid climatic regime. Jones’ cycladenia’s ecosystem was thought fragile, easily degraded, and slow to recover (51 FR 16526-16530). Ongoing and potential anthropogenic impacts on habitat include OHV use; oil, gas, and mineral exploration including uranium mining and tar sands; and livestock grazing (although the rule notes the probability of grazing causing serious damage was low) (51 FR 16526-16530). Habitat disturbance was thought to be reducing seedling establishment. Jones’ cycladenia was also at risk due to inadequate state and federal regulatory mechanisms (FWS 2008c).

The variety’s threatened status has prompted federal land managers to implement protective measures to limit impacts from OHV and mountain bike use, cattle grazing, and extractive activities. While these threats have been managed to reduce anthropogenic impacts, these issues remain an ongoing and long-term concern. Specifically, mountain biking and OHV use occurs near the Moab and San Rafael complexes; cattle grazing occurs at sites in the San Rafael complex; and uranium mining and tar sands extraction are foreseeable threats in both the San Rafael and Greater Circle Cliffs complex (both complexes are in Designated Special Tar Sands Areas) (FWS 2008c).

Since listing, a number of other biological limiting factors have been revealed. Preliminary research (1988 to 1993) has shown the plant has low fruit production and seed set, likely due to a complicated pollination system and inadequate pollinator abundance (i.e., pollinators may have been lost or may be migratory and appear episodically). No seedling germination events have been documented (FWS 2008c). Genetic research at San Rafael (the Spotted Wolf Canyon site), Moab (two separate sites at Onion Creek and Castle Valley), and Greater Circle Cliffs complexes (one site at Deer Point, one site at Silver Falls Canyon, and one site at Purple Hills) indicates these sites of Jones’ cycladenia are genetically distinct and not inbred, but may face other genetic limitations, such as genetic bottlenecking or genetic drift. Several researchers have concluded that an ongoing lack of population recruitment may result in a permanent loss of genetically important individuals or occupied sites. The species’ fractured distribution could further complicate issues associated with limited natural reproduction, dispersal constraints, and genetic risks (FWS 2008c).

As a Tertiary relict, Jones' cycladenia may be affected by global climate change. It is very likely that hot extremes, heat waves, and heavy precipitation will increase in frequency (Intergovernmental Panel on Climate Change 2007). Increased temperatures could result in the need for the species to colonize cooler, higher elevation sites (FWS 2008c).

Other factors reported since the time of listing include, natural predation and relations to fragile cryptobiotic crusts in some locations (FWS 2008c).

Occurrence in the Project Area

The species has not been recorded north of Interstate 80 in Utah. Heritage data did not include any occurrences of the species within 10 miles of alternative routes (Colorado Natural Heritage Program [CNHP] 2011; UNHP 2012; Wyoming Natural Diversity Database [WYNDD] 2011). The BLM Price Field Office conducted a study in 2012 to document distribution, identify habitat requirements and model the extent of suitable habitat of the species (Sansom and Elliott 2012). The results of the study indicated potentially suitable habitat for the species could be present along Links U727, U728, U729, U730, U732, U733 and U734 in Emery County, Utah.

Pariette Cactus (*Sclerocactus brevispinus*) – FWS: Threatened

Regulatory Status

Pariette cactus was listed as threatened under the ESA on October 11, 1979, based primarily on threats of over-collection and habitat destruction (44 FR 58868). At that time, it was listed as part of *Sclerocactus* complex of three species: Pariette cactus (*Sclerocactus brevispinus*), Colorado hookless cactus (*Sclerocactus glaucus*), and Uinta Basin hookless cactus (*Sclerocactus wetlandicus*). In 2006, a petition was filed to remove the *Sclerocactus* complex from the list of threatened plants but after a 90-day review, the petition was denied, and the status of these species remained unchanged (71 FR 75215). On September 18, 2007, the FWS initiated a 12-month petition to change the taxonomy of the threatened *Sclerocactus* complex to three distinct species to reflect the taxonomy generally accepted in scientific literature. Because all three species were once considered part of the *Sclerocactus* complex when the species was listed as threatened, all would remain listed as threatened under the new taxonomic status. In the same petition, the FWS also proposed to upgrade Pariette cactus to endangered status (72 FR 53211). On March 28, 2008, a 5-year review was released that determined that upgrading Pariette cactus from threatened to endangered was warranted but was precluded by higher priority actions. The FWS officially recognized the taxonomic revision in September 2009 and listed each species as threatened, independent of the other species (74 FR 47112–47117).

A recovery outline for Pariette cactus was published in April 2010. No critical habitat for Pariette cactus has been designated (72 FR 75215). However, the FWS and BLM are currently working to identify core conservation areas and develop management recommendations to ensure that *Sclerocactus* species can be recovered, especially in light of potential energy development projects that could increase the level of development in *Sclerocactus* habitat and across the species range. Core areas are based on pollinator travel distance and are designed to provide habitat connectivity between populations and individuals.

Taxonomy and Life History

Pariette cactus has had an involved taxonomic history. Individuals in the *Sclerocactus* complex were first collected by Schumann in 1898 and initially described as *Echinocactus glaucus*. In 1917, considering the Schumann publication to be illegitimate, Rydberg described the species as *Echinocactus subglaucus*. In

1925, Purpus treated the species as a variety of Whipple's fishhook cactus (*Echinocactus whipplei* var. *glaucus)*. By 1939, the species was first placed in the genus *Sclerocactus* as *Sclerocactus franklinii* (Evans 1939). In 1966, Benson assigned six species to the *Sclerocactus* genus and noted that *S. glaucus* was distinguished from others in the genus by a large unhooked central spine and noticeably smaller seeds (Benson 1966). In 1972, Arp changed the genus to *Pediocactus*, leading to an assignment of *Pediocactus glaucus* (Arp 1972). In 1981, the species was restored to Benson's concept of *Sclerocactus* (Heil et al. 1981) and re-established as *Sclerocactus glaucus* in the taxonomic literature (FWS 1990a).

Sclerocactus glaucus remained the accepted name until revisions to the taxonomy of the Uinta Basin hookless cactus in 1989 resulted in three distinct species, once part of the *Sclerocactus* complex. This reclassification was based on genetic studies, common garden experiments (Welsh et al. 2003), distribution, and a re-evaluation of the morphological characteristics. The FWS officially recognized the taxonomic revision in September 2009 and listed each species as threatened independent of the other species (74 FR 47112–47117).

Pariette cactus is a morphologically unique *Sclerocactus*. It is much smaller (less than 3.1 inches tall) and retains the vegetative characteristics of juvenile *Sclerocactus wetlandicus* individuals in adult flowering plants (72 FR 53211). It has spheric and unbranched stems, short spines, and small pink flowers. Flowers also bloom in late April to May but the species produces green to tan fruits, sometime suffused with pink. The seeds are small, black, and convex (Flora of North America Editorial Committee 1993+).

Although no long-term demographic data is available, it is believed that the species may live for 10 to 20 years in good conditions. Populations range from 1 to more than 1,000 individuals with a wide range of ages. Known predators include the cactus borer beetle and rodents (FWS 1990a).

Distribution and Habitat Requirements

The known distribution of the *Sclerocactus* complex includes federal, state, tribal, and private lands in Utah (Uintah, Duchesne, and Carbon counties) and Colorado (Mesa, Delta, Garfield, and Montrose counties). At the time of listing, eight populations of the *Sclerocactus* complex were known to occur in five counties in western Colorado and eastern Utah. Since that time, two small outlier populations near Gateway, Colorado, and Bonanza, Utah have been identified. Ninety percent of the total population of the three species occurs on BLM-administered lands (FWS 1990a). Because the specific distribution and habitat requirements vary for the three species, they are described separately.

Pariette cactus occurs only in the clay badlands of Pariette Draw in the central Uinta Basin south of Myton, Utah, which gradates into *Sclerocactus wetlandicus* near the mouth of Pariette Draw south of Ouray, Utah (FWS 1990a). The species is restricted to only one known population in an area about 10 miles long by 3 miles wide along the Duchesne-Uintah County boundary. The population is on BLM, Ute Tribe, State of Utah, and private lands. The total species population is estimated to be about 8,000 individuals on 18,000 acres. In a 1985 species inventory, 3,795 individuals were located on approximately 15,000 acres of BLM-administered land and minor amounts of state and private lands. BLM estimated this population represented 75 percent of the total population on BLM-administered lands. Based on that information, the estimated 1985 population of Pariette cactus on BLM-administered land was approximately 5,000 individuals (72 FR 75215).

Pariette cactus grows on fine soils in clay badlands derived from the Uinta formation. It inhabits a low hilly terrain overlain with gravel and stone (UDWR 2005b). The habitat is a sparsely vegetated desert shrubland dominated by saltbush, rabbitbrush, and horsebrush. Approximately 72 percent of the range occurs in the approved Castle Pak/Eightmile Flat oil and gas field in the Project area and the pending Gasco Uinta Basin Natural Gas Field Development project (FWS 2008e). The remaining portion of the range contains wells drilled in the Sand Wash and Greater Boundary Units (72 FR 75215).

Primary Threats to Survival

The primary threats to the survival of the *Sclerocactus* complex stem from mineral and energy development, water development, and collection. Most of the range of the species is in existing oil and gas fields or undeveloped oil and gas lease areas. This activity has the potential to devastate local populations. The cactus is also sought out by professional and amateur cactus growers for its beautiful flowers. Because of its natural scarcity, it is a prized species for collectors and therefore could be highly threatened by the unregulated commercial trade of those plants collected from the wild (FWS 1990a). An important natural threat to *S. brevispinus* is genetic swamping from the more widespread *S. wetlandicus*, near the crossing of habitat at the mouth of the Pariette Draw (Flora of North America Editorial Committee 1993+).

Occurrence in the Project Area

The entire population of Pariette cactus is believed to be confined to a 30-square mile area around the Pariette Draw. This area lies within 5 miles of Link U402. A 2007 study located 30 occurrences of the species within 1 mile of the proposed centerline of Link U402 in the vicinity of Pariette Draw.

San Rafael Cactus (*Pediocactus despainii*) – FWS: Endangered

Regulatory Status

On December 15, 1980, the FWS published a notice of review for plants that included San Rafael cactus as a candidate for listing (45 FR 82479). Amendments to the ESA in 1982 required that a finding must be made as to whether a requested action is warranted, not warranted, or warranted but precluded by other activity within 12 months of the initial intent to list. All petitions pending as of October 12, 1982, were treated as having been received on that date. Each successive year after the 1982 amendments, the FWS released notice that an endangered determination for the San Rafael cactus was warranted but precluded by other listing activity. The final rule to list the species as endangered was published on September 16, 1987 (52 FR 34914). Critical habitat has not been designated as to prevent the escalation of illegal collection of the plant.

A draft recovery plan for the San Rafael and Winkler cactus was published in 1995. In 2007, a recovery outline for the two species was released, indicating the final approved plan was expected in September 2009 (FWS 2007a). However, as of 2011, the final plan had not been released. Due to the species' small, restricted populations and desirability to collectors, the species is vulnerable to over-collection, making it unlikely that it will be safely removed from the protection of the ESA in the foreseeable future. Thus, the object of the draft recovery plan is to downlist the species to threatened and this can be considered when (1) a minimum of five additional separate populations with 2,000 or more individuals per population are discovered; (2) formal land management designations and management plans that would provide long-term protection on undisturbed habitat for each population are implemented; (3) viable populations of the species are maintained by ensuring the protection of the current populations and occupied habitat for both species through enforcing the conservation provisions of Sections 7 and 9 of the ESA (FWS 1995a).

Taxonomy and Life History

San Rafael cactus is a member of the cactus family (*Cactaceae*). It was discovered by Kim Despain in 1978 and described by Welsh and Goodrich (Welsh and Goodrich 1980). It also can be known as Despain's footcactus or Despain pincushion cactus (UDWR 2005b). The genus *Pediocactus* contains eight species endemic to the Colorado Plateau region of Utah, Colorado, New Mexico, and Arizona. All eight of the species are either listed as endangered or are being considered for listing. It is believed the seven disjunct species are relict species of a once more widespread genus that was fragmented by climate change (52 FR 34914).

San Rafael cactus is a small, ovoid, leafless, stem succulent. The cactus is distinguished from other members of the genus by its larger stem, hairless areoles, and bronze tint (52 FR 34914). There is generally only one stem that reaches 2.5 inches tall and 3.7 inches in diameter. The stem lacks a central spine, but white radial spines are common, numbering 9 to 13. The flowers grow up to 1 inch and can be yellow-bronze, peach-bronze, or pink with a purple midstripe. The fruit is initially green turning to reddish-brown with age. The kidney-shaped seeds are shiny and black (FWS 1995a).

Flowering occurs from April to May with fruits produced in May to June but can vary in accordance with temperature and moisture conditions. Reproduction is sexual and pollination is believed to be done by wild bees of the family *Halictidae* (FWS 1995a). The San Rafael cactus has been observed to shrink underground for several months to a year during dry or cold seasons. It is only noticeable for a short amount of time in the spring when it is in bloom. These habits make the cactus especially difficult to locate (52 FR 34914).

Distribution and Habitat Requirements

As of 1995, there are three known populations of the San Rafael cactus with an estimated total population of 20,000 individuals. Most of the plants occur on lands managed by the BLM. It is entirely restricted to the San Rafael Swell of Utah (central Emery County). One population exists in the north-central portion of the San Rafael Swell, north of the San Rafael River. The second population occurs in the south-central portion of the San Rafael Swell, south of I-70, and the third population is found in the western portion of the swell, near I-70 (FWS 1995a).

San Rafael cactus grows in fine textured, mildly alkaline soils rich in calcium derived from limestone substrates of the Carmel Formation and the Sinbad member of the Moenkopi formation. The species is most commonly found on benches, hill tops, and gentle slopes with a southern exposure. It grows in open woodland of scattered Utah juniper and pinyon pine with an understory of shrubs and grasses (FWS 1995a).

Primary Threats to Survival

There are three primary threats to the survival of San Rafael cactus: over-collection, trampling, and destruction of habitat for access to oil and gas reserves. In addition, the small size of the population and limited range render the species extremely vulnerable to small disturbances. Although the San Rafael cactus can be difficult to cultivate, it is a highly prized, rare species desired in cactus collections. Cactus collectors are very active in the Colorado Plateau. Collection is forbidden but the remoteness of the habitat makes collection difficult to control (FWS 1995a).

San Rafael cactus habitat is vulnerable to destruction caused by off-road vehicle use and livestock. The plant itself can be shrunken into the ground during some portions of the year, which provides some natural protection from trampling. However, the species forms flower buds in the fall at ground level leaving it very vulnerable to surface disturbance and potentially reducing reproductive capacity. The spines of most cacti prevent major damage from grazing, but the size and shortness of spines on the San Rafael cactus provide very little security (FWS 1995a).

The habitat of San Rafael cactus is underlain by bentonite clay, uranium ore deposits, gypsum, petroleum, and other minerals. Future development of these resources has potential for adverse effects on the cactus and associated habitat (FWS 1995a).

Occurrence in the Project Area

San Rafael cactus is known to occur in the central portion of the Project area in Emery and Wayne counties, Utah. It has been identified from the eastern base of Cedar Mountain, southwest to The Wedge and The Red Ledges and south into Cathedral Valley (UDWR 2005b). The species is known to occur in the Project area along Links U728, U729, and U733.

Shrubby Reed-mustard (*Schoenocrambe suffrutescens*) – FWS: Endangered

Regulatory Status

On July 1, 1975, the FWS published a notice that included shrubby reed-mustard as a candidate for listing (41 FR 24523). Amendments to the ESA in 1978 required that all petitions more than 2 years old be withdrawn, but that petitions already more than 2 years old were subject to a 1-year grace period. On December 10, 1979, the FWS withdrew the petition to list the shrubby reed-mustard because it was not finalized within the 1-year grace period (44 FR 70796). The species was once again listed as a candidate species in the December 15, 1980, notice of review. Amendments to the ESA in 1982 required that a finding must be made as to whether a requested action is warranted, not warranted, or warranted but precluded by other activity within 2 years of the intent to list. All petitions pending as of October 12, 1982, were treated as having been received on that date. For each successive year after the 1982 amendments, the FWS released notice that an endangered determination for the shrubby reed-mustard was warranted but precluded by other listing activity. The final rule to list the species as endangered was published on October 6, 1987 (52 FR 37416). In September 1985, approximately 7,360 acres of critical habitat was proposed in the vicinity of Hill Creek in Uintah County (50 FR 36118-36112). No final rule has been issued finalizing designation of critical habitat for the species.

The recovery plan for three Utah reed-mustards was published in 1994. The goal of the plan is to delist or downlist the shrubby reed-mustard. Due to a small total population, vulnerability of the habitat to ongoing and potential oil and gas activity, and unrestricted off-road vehicle use, downlisting and delisting of the shrubby reed-mustard appears unlikely in the near future. However, criteria for downlisting include (1) discovering or establishing a minimum of five separate populations with 2,000 or more individuals per population and (2) document or establish formal land management designations that would provide for long-term protection on undisturbed habitat for the above five populations. The species may be considered for delisting when the above criteria are expanded to ten populations (FWS 1994a). The FWS initiated a 5-year review on October 6, 2008 (73 FR 58261). The 5-year review determined that the species should retain its current listing status (FWS 2010).

Taxonomy and Life History

Shrubby reed-mustard, also known as toad-flax cress, Graham's schoenocrambe, shrubby glaucocarpum, and the Uinta Basin waxfruit, is a member of the mustard (*Brassicaceae*) family (UDWR 2005b). It was first discovered in the Uinta Basin of Uintah County, Utah in 1935 and described by Reed C. Rollins as *Thelypodium suffrutescens*. Following further taxonomic research, in 1938 Rollins described it to the monotypic genus *Glaucocarpum*. By 1992, the name was changed to shrubby reed-mustard (S*choenocrambe suffrutescens*) to complete a morphologically discrete phylogenetic unit of five species that also includes the threatened clay reed-mustard (*S. argillacea*) and endangered Barneby reed-mustard (S*choenocrambe barnebyi*) (57 FR 1398). The genus is under some review and is commonly placed in either *Glaucocarpum* or *Schoenocrambe* (UDWR 2005b).

Shrubby reed-mustard is a perennial, herbaceous plant with multiple, clumped stems that reach 1 foot in height. The leaves are alternately arranged and attached to the stem by a short petiole. The flowers are light yellow or greenish yellow that grow to half an inch, displayed in a raceme of 5 to 20 flowers at the plant's leafy stems (FWS 1994a).

All three species of reed-mustards flower from April to May with fruit appearing May to June. Reproduction is sexual and pollination is aided by insects, primarily several species of bees. Within the raceme, flowers mature closest to the stem first and spread upward. The flowers are most fragrant in the morning and decline as the day progresses. Little is known about the long-term population dynamics, disease, parasitism, effects of grazing, competition, and viability of any of the species (FWS 1994a).

Distribution and Habitat Requirements

Shrubby reed-mustard is confined to localized geological formations of buff-colored calcareous shale of the Green River Formation in the Uinta Basin of eastern Utah (Duchesne and Uintah counties). In 1985, eight parcels of this habitat totaling 7,360 acres were proposed as critical habitat, but the rule was never finalized (50 FR 36118-36112). This area supports the majority of the known populations and appears to be necessary to the continued survival of the species (FWS 1994a).

There are currently seven known populations of shrubby reed-mustard. Four populations lie between Hill Creek and Willow Creek (Big Pack Mountain, Thorn Ranch, Johnson Draw, and Agency Draw) totaling approximately 2,440 individuals). Two populations are on the west side of Hill Creek (Gray Knolls and Dog Knoll) and comprise approximately 320 individuals. A single population exists in Duchesne County approximately 15 miles from the other populations. It is approximately 1.5 miles north of the junction of Nine Mile Creek and Daddy Canyon. This population (Badlands Cliff/Wrinkles Road) has a population of approximately 170 individuals (FWS 2010).

Shrubby reed-mustard occurs in desert-shrub communities with sparse juniper and pinyon pine trees. It grows on clay soils with white shale. In contrast to the other listed *Schoenocrambe* species, the shrubby reed-mustard generally grows on level to moderately sloping round surfaces. The soil is derived from the Evacuation Creek Member of the Green River geological formation at an elevation of 5,400 to 6,000 feet (FWS 1994a).

Primary Threats to Survival

Primary threats to shrubby reed-mustard include threats associated with the oil and gas industry, off-road vehicle use, and small population. All known populations are on federal lands that are leased for oil and gas energy reserves and petroleum deposits being developed in adjacent habitats with the exception of a small portion on Uintah and Ouray Reservation of the Ute Indian tribe. In addition, the entire range of the species is underlain by oil shale. The species is also vulnerable to ground-disturbing activities associated with energy development (FWS 1994a).

Another particular threat to shrubby reed-mustard is association of habitat with commercially valuable native building stone composed of volcanic ash deposited during the prehistoric Uinta Lake during the Eocene epic. Previous commercial stone excavation is believed to have caused the extirpation of a portion of the population near the Big and Little Pack Mountains (50 FR 36118). In addition, there are risks associated with the species having only three small populations that could be devastated by an unpredictable catastrophe such as an extreme weather event (Beacham et al. 2005).

Occurrence in the Project Area

Shrubby reed-mustard is known to occur in the central portion of the Project area in Uintah and Duchesne counties, Utah. The Badlands Cliff/Wrinkles Road population falls within 1 mile of alternative routes.

Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*) – FWS: Threatened

Regulatory Status

Uinta Basin hookless cactus was listed as threatened under the ESA of 1973 on October 11, 1979, based primarily on threats of over-collection and habitat destruction (44 FR 58868). At that time, it was listed as part of *Sclerocactus* complex of three species: Pariette cactus (*Sclerocactus brevispinus*), Colorado hookless cactus (*Sclerocactus glaucus*), and Uinta Basin hookless cactus (*Sclerocactus wetlandicus*). In 2006, a petition was filed to remove the *Sclerocactus* complex from the list of threatened plants but after a 90-day review, the petition was denied, and the status of these species remained unchanged (71 FR 75215). On September 18, 2007, the FWS initiated a 12-month petition to change the taxonomy of the threatened *Sclerocactus* complex to three distinct species to reflect the taxonomy generally accepted in scientific literature. Because all three species were once considered part of the *Sclerocactus* complex when the species was listed as threatened, all would remain listed as threatened under the new taxonomic status. The FWS officially recognized the taxonomic revision in September 2009 and listed each species as threatened independent of the other species (74 FR 47112–47117).

A recovery outline for the *Sclerocactus* complex was published in April 2010. No critical habitat for Uinta Basin hookless cactus has been designated (72 FR 75215). Core conservation areas also have been established by the FWS to provide management guidance for habitat for both Uinta Basin hookless cactus and Pariette cactus (heretofore referred to as Sclerocactus core habitat), as no clear geographic delineation between the ranges and habitat requirements of these species exists (FWS n.d.). The FWS and BLM are currently working to develop management recommendations to ensure that *Sclerocactus* species can be recovered, especially in light of potential energy development projects that could increase the level of development in *Sclerocactus* habitat and across the species range. Core areas are based on pollinator travel distance and are designed to provide habitat connectivity between populations and individuals.

Taxonomy and Life History

Uinta Basin hookless cactus has had an involved taxonomic history. It was first collected by Schumann in 1898 and initially described as *Echinocactus glaucus.* In 1917, considering the Schumann publication to be illegitimate, Rydberg redescribed the species as *Echinocactus subglaucus*. In 1925, Purpus treated the species as a variety of Whipple's fishhook cactus *Echinocactus whipplei* var. *glaucus*. By 1939, the species was first placed in the genus *Sclerocactus* as *Sclerocactus franklinii* by Evans. In 1966, Benson assigned six species to the *Sclerocactus* genus and noted that *Sclerocactus glaucus* was distinguished from others in the genus by a large unhooked central spine and noticeably smaller seeds (Benson 1966). In 1972, Arp changed the genus to *Pediocactus,* leading to an assignment of *Pediocactus glaucus* (Arp 1972). Finally, in 1981, the species was restored to Benson's concept of *Sclerocactus* (Heil et al. 1981) and re-established *Sclerocactus glaucus* in the taxonomic literature (FWS 1990a).

Sclerocactus glaucus remained the accepted name until revisions to the taxonomy of the Uinta Basin hookless cactus in 1989 resulted in three distinct species, once part of the *Sclerocactus* complex. This reclassification was based on genetic studies, common garden experiments (Welsh et al. 2003), distribution, and a reevaluation of the morphological characteristics. The recently published Flora of North America now recognizes *Sclerocactus glaucus*, *Sclerocactus wetlandicus*, and *Sclerocactus brevispinus,* which collectively were recognized as *Sclerocactus glaucus* at the time of listing (72 FR 53211). The FWS officially recognized the taxonomic revision in September 2009 (74 FR 47112–47117).

Uinta Basin and Colorado hookless cacti (*Sclerocactus wetlandicus* and *Sclerocactus glaucus)* are morphologically similar. They are low growing, leafless succulent plants that are oval to globular in shape. The stems are generally solitary, but sometime grow in clusters of two or three. Individuals can reach heights of 1.5 to 7 inches and 1 to 4.5 inches in diameter. Stems are covered with protuberances arising from the twelve ribs. The cacti have numerous 1- to 2-inch pinkish flowers that have pronounced ultra-violet reflectance, unique to the genus (FWS 1990a). Flowers bloom in late April to May and produce green, thin-walled fruits that turn red at maturity. The seeds are small, black, and asymmetrical. It appears that small bees (families *Halictidae* and *Anthophoridae*), ants, and gravity are the primary dispersal mechanisms that may be a limiting factor to the distribution (NatureServe 2008b).

Although no long-term demographic data is available, it is believed that the species may live for 10 to 20 years in good conditions. Populations range from 1 to more than 1,000 individuals with a wide range of ages. Known predators include the cactus borer beetle and rodents (FWS 1990a).

Distribution and Habitat Requirements

The known distribution of the *Sclerocactus* complex includes federal, state, tribal, and private lands in Utah (Uintah, Duchesne, and Carbon counties) and Colorado (Mesa, Delta, Garfield, and Montrose counties). At the time of listing, eight populations of the *Sclerocactus* complex were known to occur in five counties in western Colorado and eastern Utah. Since that time, two small outlier populations near Gateway, Colorado and Bonanza, Utah have been identified. Ninety percent of the total population of the three species occurs on BLM-administered lands (FWS 1990a). Because the specific distribution and habitat requirements vary for the three species, they are described separately.

Uinta Basin hookless cactus (*Sclerocactus wetlandicus*) is endemic to northeast Utah (Duchesne and Uintah counties) where it occurs entirely in the BLM Diamond Mountain planning area. Current population estimates are at about 30,000 individuals over a range that is approximately 60 miles long and 25 miles wide. Individuals are patchily to densely distributed near the confluence of the Green, White, and Duchesne rivers near Ouray National Wildlife Refuge and the town of Ouray, Utah south along the Green River to the vicinity of Sand Wash including concentrations near the mouth of the Pariette Draw (FWS 1990a).

Sclerocactus wetlandicus and *Sclerocactus glaucus* occur in salt desert shrub communities and pinyon-juniper woodlands on river benches, valley slopes, and rolling hills. Both species occur on Quaternary and Tertiary alluvial soils that are fine textured, dry, and overlain with cobble and pebble (BLM 2008d). The soil is weathered from the Uinta and Green River formations. Most of the range is in existing oil and gas fields or in undeveloped oil and gas lease areas. The cactus is more abundant on south facing slopes with up to a 30 percent grade at an elevation of 4500 to 5900 feet. Associated vegetation includes shadscale, galleta, black sage, and Indian rice grass (FWS 1990a).

Primary Threats to Survival

The primary threats to the survival of Uinta Basin hookless cactus stem from mineral and energy development, water development, and collection. Most of the range of the species is in existing oil and gas fields or undeveloped oil and gas lease areas (BLM 2008d). This activity has the potential to devastate local populations. The cactus is also sought out by professional and amateur cactus growers for its beautiful flowers. Because of its natural scarcity, it is a prized species for collectors and therefore could be highly threatened by the unregulated commercial trade of those plants collected from the wild (FWS 1990a).

Occurrence in the Project Area

The Uinta Basin hookless cactus is known to occur in the central portions of the Project area in Utah (Uintah, Duchesne, and Carbon counties) and Colorado (Mesa and Garfield counties). Most of the populations are on BLM-administered lands, but also occur on the Ouray National Wildlife Refuge, the Uintah and Ouray Reservation, and private lands. In the Utah portion of the range, Uinta Basin hookless cactus occurs on alluvial river terraces near the confluence of the Green, White, and Duchesne rivers south along the Green River to the vicinity of Sand Wash and the mouth of the Pariette Draw, the Badland Cliffs, and the clay badlands of the Pariette Draw drainage south of Myton, Utah (FWS 1990a). Populations are known to occur along Links U400 and U402 along Pariette Draw, Nine Mile Canyon, and the Green River.

Ute Ladies'-tresses (*Spiranthes diluvialis*) – FWS: Threatened

Regulatory Status

On September 27, 1985, the FWS published a notice that included Ute ladies'-tresses as a Category 2 species candidate for listing (50 FR 39526). Category 2 comprised taxa for which the FWS had information indicating the appropriateness of a proposal to list as endangered or threatened but for which more substantial data was needed on biological vulnerability and threats. After a review of status information acquired after the 1985 notice, the FWS upgraded Ute ladies'-tresses to a Category 1 species in the February 21, 1990, Notice of Review (55 FR 6184), which meant the FWS had in possession enough data to support listing. The final decision to list the species as threatened was published on January 17, 1992 (57 FR 2048). Critical habitat was not designated for the species. On May 10, 1996, the FWS received a petition from the Central Utah Water Conservancy District to delist Ute ladies'-tresses. Due to the low priority assigned to delisting petitions, the FWS postponed immediate action. On October 12, 2004, the FWS initiated a 5-year review that would be used to determine the outcome of the petition to delist (69 FR 60605). The recovery plan for Ute ladies'-tresses was published in 1995 (FWS 1995b).

The recovery plan for Ute ladies'-tresses was published in 1995 (FWS 1995b). The objective of the plan is the continued existence of Ute ladies'-tresses, but no specific delisting criteria are given. The species will be considered for delisting when sites that include occupied habitat harboring 90 percent of the plants in each ecoregion are protected at public ownership or higher levels of protection and managed in accordance with a FWS-approved management plan. The plan must assure implementation of management practices that provide the range and spatial distribution of successional and hydrologic regimes required to maintain the species and its pollinators in self-sustaining, naturally occurring populations that will remain in effect after delisting occurs.

Taxonomy and Life History

The Ute ladies'-tresses, also known as flood ladies'-tresses, is a member of the family *Orchidaceae* (UDWR 2005b). Prior to 1984, only three species of white-flowered Ladies'-tresses were known to exist – *Spiranthes cernua, Spiranthes romanzoffiana,* and *Spiranthes porrifolia.* In 1980, a specimen was collected near Golden, Colorado that was first thought to be *Spiranthes cernua* and sent to Dr. Charles Sheviak who was conducting studies on the genus *Spiranthes*. In 1984, after visiting sites in both Colorado and Utah, Sheviak described the new species *Spiranthes diluvialis*. In the description, *Spiranthes diluvialis* is believed to have resulted from the hybridization of *Spiranthes magnicamporum* and *Spiranthes romanzoffiana* during a Pleistocene pluvial period, at a time when the two species would have occurred sympatricly (FWS 1995b).

Ute ladies'-tresses is a long-lived perennial orchid with a flowering stalk arising from clusters of basal leaves and short thickened roots. It reproduces only by seeds and can produce as many as 7300 seeds per fruit that can persist for up to 8 years as subterranean saprophytes dependent on mycorrhizal fungi. Leaf rosettes may emerge at the end of the growing season and overwinter. In any given year, mature plants can be found in stages – flowering, non-flowering (vegetative), and seasonally dormant stages. Under adverse conditions, individual plants may not flower and can persist underground for an unknown period of time until conditions are amenable to survival above ground. This can make locating the plant difficult and the species can only reliably be identified when flowering (FWS 1995b).

Distribution and Habitat Requirements

Ute ladies'-tresses is known to occur in three general areas: near the base of the eastern slope of the Rocky Mountains, the Uinta Basin, and near the western base of the Wasatch Mountains. Near the Rocky Mountains, the species is found in north-central and central Colorado (Clear Creek, Jefferson, Boulder, Larimer, and possibly Moffat counties), east-central Idaho (Bonneville and Jefferson counties), southwestern Montana (Beaverhead, Broadwater, Gallatin, Jefferson, and Madison counties) and east-central and southeastern corner of Wyoming (Converse, Goshen, Laramie, and Niobrara counties), and downstream in western Nebraska (Sioux, Washington, and Okanogan counties). In the Uinta Basin, the species is generally associated with the upper Colorado River drainage. Near the Wasatch Mountains, the species is generally found in the eastern Great Basin of western Utah in Daggett, Garfield, Wayne, Utah, Salt Lake, Weber, and Tooele counties (FWS 1995b).

The Ute ladies'-tresses is endemic to moist or very wet meadows near springs, lakes, or perennial streams. It is also found in abandoned stream meanders that retain ample groundwater. It is found at elevations ranging from 4,300 to 7,000 feet. The species is generally found in areas with relatively open vegetation, although some individuals have been observed in the riparian woodlands of eastern Utah and Colorado. Populations are generally small and located in scattered groups occupying small areas in the riparian system (FWS 1995b).

Primary Threats to Survival

Riparian habitat and the nomadic grazing typical of native ungulates are vital to Ute ladies'-tresses to create and maintain habitat, both of which have been altered since settlement of the west. Orchid habitat is now grazed by cows, sheep, or horses, all of whose grazing habits differ from native ungulates in timing and intensity. Season-long grazing where the plants are destroyed after flower stem formation can be detrimental to the already low reproductive success of the species. Water developments, urbanization, and dams interrupt flooding cycles causing fragmentation and destruction of vital habitat (57 FR 2048). Reservoirs, dams, and diversions have drastically altered some stream systems by completely dewatering some reaches and changing their magnitude and timing of flow. In addition, invasion by noxious weeds such as the leafy spurge (*Euphorbia esula*), spotted knapweed (*Centaurea maculosa*), and Russian knapweed (*Centaurea repens)* can outcompete the species in already limited habitat (FWS 1995b). Degradation of habitat for pollinator species in the surrounding area also has been proposed as a threat to the species (Sipes and Tepedino 1995).

Occurrence in the Project Area

Ute ladies'-tresses is known to occur along Links U420 and U430. One location is near the junction of Benson Draw and the Duchesne River along Link U420. Another location is along the Lake Fork Canal west of Upalca along Link U420. Another location is along Currant Creek west of Fruitland along Link U420. Two occurrences are along the Lake Fork River west of Ioka along Link U430. A known population is crossed by the centerline of Link U430 at Lake Fork River.

At the request of the BLM and FWS, EPG identified potentially suitable habitat for Ute ladies'-tresses in 6th level hydrologic unit code (subwatersheds) crossed by Project alternative routes using GIS desktop analysis. Modeled potentially suitable habitat was visually refined for an area within a 1-mile buffer around all reference centerlines as defined in April 2012, October 2012, and again in April 2013 based on revised centerlines in Wyoming, Colorado and Utah.

Western Prairie Fringed Orchid (*Platanthera praeclara*) – FWS: Threatened

Regulatory Status

On October 11, 1988, the FWS published a proposal to list western prairie fringed orchid as threatened (53 FR 39621-39626). This rule was finalized on September 28, 1989 (54 FR 39857-39863). Critical habitat has not been designated for the species.

The recovery plan for western prairie fringed orchid was published in 1996 (FWS 1996). The objective of the plan is to delist the species. The species will be considered for delisting when sites that include occupied habitat harboring 90 percent of the plants in each ecoregion are protected at public ownership or higher levels of protection and managed in accordance with a FWS-approved management plan. The plan must assure implementation of management practices that provide the range and spatial distribution of successional and hydrologic regimes required to maintain the species and its pollinators in self-sustaining, naturally occurring populations that will remain in effect after delisting occurs.

Taxonomy and Life History

The western prairie fringed orchid, also known as Great Plains white fringed orchid, is a member of the family *Orchidaceae*. The species was previously included as a single species with the eastern prairie fringed orchid (*Platanthera leucophaea*) but was described separately in 1986 by Dr. Bowles on the Sheyenne National Grassland in Ransom County, North Dakota (FWS 1996).

The western prairie fringed orchid is a smooth, erect perennial herb with two to five fairly thick elongated hairless leaves. Flowers are wide and white in color with the lower petal deeply three-lobed and fringed. Plants typically grow to approximately 4 feet in height (FWS 1996). Like many orchids, western prairie fringed orchid may experience periods of dormancy. Research estimates 4 to 12 percent of plants may be dormant each year and dormancy may be as short as 1 year but could last as long as 8 years (FWS 2009a). This can inhibit the ability of surveyors to detect the species presence.

Distribution and Habitat Requirements

The western prairie fringed orchid is historically known to occur throughout the Great Plains of North America. In 1996, populations of the species were known to occur in 41 counties across six states (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota) and Manitoba, Canada (FWS 1996). Populations in Nebraska are in the Platte River watershed.

The species inhabits tallgrass prairies and is found most often on unplowed, calcareous prairies and sedge meadows. It also has been known to occur at disturbed sites in successional communities such as borrow pits, old fields, and roadside ditches. Most locations are similar in that they are subirrigated by near-surface groundwater that provides a reliable source of water. Species likely to occur with the orchid are big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and Indiangrass (*Sorghastrum nutans*) in tallgrass prairies and sedge and spikerush (*Eleocharis* spp.) species in sedge meadows (FWS 1996).

Primary Threats to Survival

Historically, the major cause for decline of the species was conversion of habitat to cropland. Hydrologic changes that draw down or contaminate the water table also may adversely affect the species. Additional practices also may affect the species depending on their timing, frequency, and intensity. These include burning, grazing, and mowing (FWS 1996). However, the species is dependent on periodic disturbance, but these management practices must be carefully implemented (FWS 2009a).

In addition to these threats, nonnative species may out-compete western prairie fringed orchid. Inter-seeding of nonnative species to increase livestock forage is promoted in some states inhabited by western prairie fringed orchid, such as Nebraska (FWS 2009a).

Occurrence in the Project Area

The western prairie fringed orchid is not known to occur in the Project area. However, populations in Nebraska occur in the Platte River watershed. Therefore, the populations could be affected should the Project draw water from the Platte River. PacifiCorp, doing business as Rocky Mountain Power (Applicant), has not identified the specific sources and volumes of water that would be used for each alternative route at this time. All Project alternative routes would require water use in the Platte River Basin and would be subject to consultation under Section 7 of the ESA. Compliance with regulations regarding water use in the Platte River Basin will be addressed through the Section 7 consultation process.

J.6.1.2 Bureau of Land Management, U.S. Forest Service, and State-Sensitive Plant Species

Argyle Canyon Phacelia (*Phacelia argylensis*) – BLM: Utah

Argyle Canyon phacelia is found only in Argyle Canyon on the West Tavaputs Plateau in Uintah County, Utah (Welsh et al. 2008). It grows on sandy-silty soil in wash bottoms on the Green River Shale Formation in pinyon-juniper serviceberry, and Douglas fir communities at 7,595 feet (Welsh et al. 2008). Occurrences of the species are within 5 miles of alternative routes in the BLM Vernal Field Office.

Barneby's Cat's-eye (*Cryptantha barnabyi*) – BLM: Utah

Barneby's cat's-eye is a perennial forb that is locally abundant on the domed or gently sloping white shale knolls of the Green River Formation in the Uinta Basin, mostly in shadscale and pinyon-juniper communities from 6,070 to 7,870 feet (NatureServe 2013). Occurrences of the species are within 1 mile of alternative routes in the BLM Vernal Field Office.

Beaver Rim Phlox (*Phlox pungens*) – BLM: Wyoming

Beaver Rim phlox is a perennial forb endemic to the Wind River and Green River basins and the southeastern foothills of the Wind River Range. The species grows on sparsely vegetated clay and shale slopes in the Green River Basin at elevations from 6,000 to 7,400 feet (NatureServe 2013). WYNDD-modeled habitat for the species occurs in the Project area in Wyoming (WYNDD 2011).

Bolander's Camissonia (*Camissonia bolanderi*) – BLM: Utah

Bolander's camissonia was first located and described as a species in 2005. It is known only from a single location in the upper Tidwell Draw approximately 15 miles northwest of the town of Green River. This location is on the Triassic Moenkopi Formation in association with saltbush and ephedra at 4,780 feet (Atwood and Welsh 2007). This sole occurrence is along Link U730.

Caespitose Cat's-eye (*Cryptantha caespitosa*) – BLM: Colorado

Caespitose cat's-eye occurs on sparsely vegetated shale knolls at 6,200 to 8,100 feet. Habitat includes pinyon-juniper or sagebrush and is typically found with other cushion plants (CNHP 2002). Current known locations are in Daggett, Uintah, Duchesne, and Carbon counties of Utah and Moffat County, Colorado (UDWR 1998). There is one known occurrence of the species within 0.5 mile of Link U401, near the Bad Land Cliffs in Duchesne County. Two occurrences are between 1.0 and 1.5 miles of Link

U20 in Daggett County. Three known occurrences, are along Links C61 and C220 in Rio Blanco and Moffat counties.

Canyon Sweet-vetch (*Hedysarum occidentale* var. *canone*) – USFS: Manti-La Sal National Forest

Canyon sweet-vetch is endemic to Carbon, Duchesne, and Emery counties, Utah, and occurs on or below the coal measures of the Mesa Verde group (Welsh et al. 2008). It is found in pinyon-juniper, serviceberry (*Amelanchier* spp.), maple (*Acer* spp.), alderleaf mountain mahogany, and sagebrush communities between 6,400 and 8,300 feet (UNPS 2012). The species is known to occur along several links in Carbon and Emery counties in Utah.

Carrington Daisy (*Erigeron carringtoniae*) – USFS: Manti-La Sal National Forest

Carrington daisy is endemic to Emery, Sanpete, and Sevier counties, Utah. It is found on Flagstaff Limestone in meadows and escarpment margins between 10,000 and 11,000 feet (UNPS 2012). There are two occurrences of the species in the Project area along Link U630. Both occurrences are within 2.5 miles of Trail Mountain in the Manti-La Sal National Forest.

Cedar Rim Thistle (*Cirsium aridum*) – BLM: Wyoming

Cedar Rim thistle occurs on barren slopes, fans, and draws on whitish-gray sandstone, chalk, tufaceous colluviums, or clay substrates in bunchgrass or cushion plant communities in openings in Wyoming big sagebrush grasslands. The species is endemic to central Wyoming (Fertig and Thurston 2003). There are no known occurrences in the vicinity of the Project area; however, there is predicted suitable habitat that occurs in the Project area. Specifically, there is suitable habitat within the 1-mile buffer along Link W21 and W491. There is high and medium likelihood suitable habitat along the centerlines of Links W126, W127, and W128 southwest of Wamsutter.

Creutzfeldt's Cat's-eye (*Cryptantha creutzfeldtii*) – BLM: Utah; USFS: Manti-La Sal National Forest

Creutzfeldt's cat's-eye occurs in scattered pinyon-juniper communities with an understory of black sagebrush and mat *Atriplex* communities on a silty-clay substrate of the Mancos Shale Formation overlain with Emery Sandstone at elevations from 5,250 to 6,500 feet. It is endemic to central Utah (Carbon, Emery, and Sevier counties) (UNPS 2012). It is currently known from scattered locations along the base of the Book Cliffs and Wasatch Plateau escarpments as they flank Castle Valley on the north and west edges (Franklin 2005) including the Manti-La Sal National Forest, BLM, and privately owned lands (UNPS 2012). A study in 1997 reported six occurrences at Rowley Flat near the junction of Links U590, U630, and U765 west of Huntington, Utah. All six occurrences are within 0.6 mile of the centerlines with three occurrences being crossed by the centerlines.

Debris Milkvetch (*Astragalus detritalis*) – BLM: Colorado

Debris milkvetch occurs on rocky soils ranging from sandy clays to sandy loams on alluvial terraces with cobbles at 5,400 to 7,200 feet. Habitat includes pinyon-juniper and mixed desert shrub communities (CNHP 1999). The species is endemic to the Uinta Basin where it is locally common across the Tavaputs Plateau; also known to occur near Starvation Reservoir to the White River drainage and Vermillion Bluffs in Colorado. Known occurrences are along centerlines of numerous links in Duchesne and Uintah counties, Utah, and Rio Blanco County, Colorado.

Dense Twinpod (*Physaria condensata*) – BLM: Wyoming

Dense twinpod is a perennial forb endemic to the southern Overthrust Belt and lower Green River Basin in southwest Wyoming. It grows on sparsely vegetated shaley slopes and ridges from 6,500 to 7,000 feet (NatureServe 2013). WYNDD-modeled habitat for the species occurs in the Project area in Wyoming (WYNDD 2011).

Dolores River Skeletonplant (*Lygodesmia grandiflora* var. *doloresensis*) – BLM: Colorado, Utah

Dolores River skeletonplant grows between canyon walls on reddish purple alluvial and colluvial soils of the Cutler Formation at 4,000 to 5,500 feet (CNHP 2002). It occurs in juniper, sagebrush, rabbitbrush, and blackbrush communities (UNPS 2012). It has the most restricted distribution of any plant in the genus and is found only in Grand County, Utah, and Mesa County, Colorado. No known occurrences are in the Project area. The closest known occurrence is in northwestern Mesa County, Colorado, between Prairie Canyon and the Colorado-Utah border. This occurrence is approximately 2 miles west of Link C196.

Duchesne Milkvetch (*Astragalus duchesnensis*) – BLM: Colorado

Duchesne milkvetch occurs on sandstone or shale outcrops at 4,600 to 6,400 feet in pinyon-juniper woodland and desert shrub communities. Current known distribution includes Utah (Uintah and Duchesne counties) and Colorado (Moffat and Rio Blanco counties) (CNHP 2002). Known occurrences are in the Project area along links in Duchesne, Uintah, and Daggett counties in Utah and a single occurrence along Link C195 in Rio Blanco County, Colorado, near Rabbit Mountain.

Ephedra Buckwheat (*Eriogonum ephredoides*) – BLM: Colorado

Ephedra buckwheat grows on white shales and soils derived from the Green River Formation. The habitat is sparsely vegetated white shale slopes at 5,600 to 6,030 feet (CNHP 2002). The current known distribution is limited to Colorado (Rio Blanco County) and Utah (Uintah County). There are four known occurrences within 4 miles of the alternative routes in Utah (Links U240 and U400). Only one of these occurrences is less than 30 years old, and was from southeastern Duchesne County, Utah, near Twin Knolls approximately 3 miles south of Link U400. There is one occurrence within the 1-mile buffer in Colorado near Shavetail Park along Link C220.

Ferron’s Milkvetch (*Astragalus musiniensis*) – BLM: Colorado

Ferron’s milkvetch occurs on shale and sandstone or the alluvium derived from them at 4,700 to 7,000 feet. Habitat includes gullied bluffs, knolls, benches, and open hillsides in pinyon-juniper woodlands or desert shrub communities. Current known distribution includes Utah and Colorado (Garfield and Mesa counties) (CNHP 2002). Know occurrences of Ferron’s milkvetch are along alternative routes in Carbon, Emery, and Grand counties in Utah and at a single occurrence in Rio Blanco County, Colorado. Numerous additional occurrences are within 5 miles of alternative routes in those counties named above as well as Mesa County, Colorado.

Gibbens’ Beardtongue (*Penstemon gibbensii*) – BLM: Wyoming, Colorado, Utah

Gibbens’ beardtongue is known to occur in Utah, Wyoming, and Colorado, relatively close to the junction of these three states. The species inhabits shaley slopes and bluffs along the Green River at elevations of 5,500 to 7,700 feet. Studies in Wyoming of soils have revealed that a common component of all sites in Wyoming have volcanic ash associated with the shale/chalk substrate. In the Project area, there are three highly studied populations encompassing several hundred plants each in Sweetwater and Carbon counties, Wyoming. Two populations are along Link W301 and the remaining population is along

Link W410. In Daggett County, Utah, another large population estimated in 1989 at more than 700 plants, but only a single individual was detected in 2010 (UNHP 2012). This population is along the Green River approximately 3 miles east of Link U20. Predicted suitable habitat is within the 1-mile buffer of Links W110, W111, W113, W300, W301, W302, W321, W370, W410, and W411. All links except Links W111 and W370 have habitat along the centerlines.

Goodrich's Blazingstar (*Mentzelia goodrichii*) – BLM: Utah; USFS: Ashley National Forest

Goodrich's blazingstar grows on steep, white, marly, calciferous shale outcrops of the Green River Formation at 8,100 to 8,800 feet. Associated vegetation includes limber pine, pinyon pine, Douglas fir, mountain mahogany, and rabbitbrush. It is endemic to southern Duchesne County where it is known to occur along the Bad Land Cliffs above Argyle Canyon and west into Avintaquin Canyon (Franklin 2005) and along the escarpment of Willow Canyon and the Anthro Mountain area of the West Tavaputs Plateau (UDWR 1998). There are three known occurrences along the centerlines of Links U401 and U431.

Goodrich's Columbine (*Aquilegia scopulorum* var*. goodrichii*) – BLM: Utah

Goodrich's columbine is endemic to Duchesne County, Utah, and occurs in bristlecone pine, limber pine, Salina wildrye, mountain mahogany, pinyon, and Douglas fir communities in Green River Shale bluffs and ridge crests from 7,400 to 9,400 feet (Welsh et al. 2008). Occurrences of the species are within 1 mile of alternative routes in the BLM Vernal Field Office.

Graham's Cat's-eye (*Cryptantha grahamii*) – BLM: Utah

Graham's catseye is a long-lived perennial that grows in mixed desert shrub, sagebrush, pinyon-juniper, and mountain brush communities on Green River Shale at 5,000 to 7,400 feet elevation within the Uinta Basin in Duchesne and Uintah counties (UNPS 2012) and San Juan County (NatureServe 2013) in Utah. Occurrences of the species are within 5 miles of alternative routes in the BLM Vernal Field Office.

Graham's Beardtongue (*Penstemon grahamii*) – BLM: Colorado and Utah

Regulatory Status

Graham's beardtongue was initially proposed to be listed as endangered on June 16, 1976 (41 FR 24523). However, on December 10, 1979, the species was withdrawn as a candidate because the species had not been listed within 2 years (as required by a 1978 amendments to the ESA). The species was designated as a category 2 candidate for listing on December 15, 1980 (45 FR 82480). On November 28, 1983, Graham's beardtongue was elevated to a category 1 candidate for listing (48 FR 53640-53670). On January 9, 2006, Graham's beardtongue was proposed to be listed as threatened with critical habitat designated in Uintah County, Utah, and Rio Blanco County, Colorado (71 FR 3158-3196). However, on December 19, 2006, the FWS withdrew the proposed rule to list the species as threatened as threats to the species were determined to be unlikely to threaten or endanger the species in the foreseeable future throughout all or a significant portion of its range. Withdrawal of this proposed rule to list the species also removed the species from candidate status (71 FR 76024-76035). Graham's beardtongue was proposed again for listing as a threatened species on August 6, 2013 (78 FR 47590-47611) and proposed critical habitat was established (78 FR 47532-47858). On August 6, 2014, FWS withdrew the proposed rule to list Graham's beardtongue based on the conclusion that the threats to the species were no longer as significant as previously determined (79 FR 46042-46087). The FWS listing withdrawal was in response to a cooperative group of federal, state, county, and private stakeholders signing a Conservation Agreement and Strategy for Graham's Beardtongue and White River Beardtongue (Penstemon Conservation Team 2014). Pursuant to commitments in the Conservation Agreement, in July 2015, a mitigation plan was released providing detailed avoidance, minimization, and mitigation measures for Graham's beardtongue and habitat (Penstemon Conservation Team 2015).

Taxonomy and Life History

Graham's beardtongue is a member of the figwort family (*Scrophulariaceae*). The species is a perennial herb that is typically 2.8 to 7.0 inches in height. Each individual has one to three stems coming from a taproot (78 FR 47591).

The species flowers from late May through mid-June (UNPS 2012). Flowers emerge as a cluster of 3 to 20 flowers, vary from light to dark lavender or pinkish, and produce 5 to 50 seeds from each of four stamens (78 FR 47591).

Distribution and Habitat Requirements

Graham's beardtongue is limited to the Uinta Basin in known occurrences in Carbon, Duchesne, and Uintah counties in Utah and Rio Blanco County, Colorado (UNPS 2012). The species inhabits exposed raw shale knolls and slopes. The majority of populations are associated with exposed oil shale Mahogany ledge (71 FR 3160).

Primary Threats to Survival

The 2013 proposed rule to list Graham's beardtongue and White River beardtongue as threatened identified present and potential energy exploration and development as the predominant threat to the continued existence of these species (78 FR 47590). Additional threats are invasive weeds and climate change. Livestock grazing, unauthorized collection, road maintenance and construction, wildfire, and small population size were determined not to be threats to these species at present (78 FR 47602-47605).

Occurrence in the Project Area

There are total of 62 occurrences of Graham's beardtongue within 5 miles of Links C22, C188, C196, U240, U242, and U400. Only two occurrences fall within the 1-mile buffer. One occurrence is approximately 9 miles west of Rangely on the north side of the White River, near Link C220. The other occurrence is close to the centerline of Links C188 and U242 on Raven Ridge near the Utah-Colorado Stateline. Conservation areas for Graham's beardtongue occurs approximately 1 mile from Link U242 and within 1 mile of Link U400 in Utah.

Grand Junction Suncup (*Camissonia eastwoodiae*) – BLM: Colorado

Grand Junction suncup inhabits mat-saltbush, shadscale, blackbrush, and juniper communities at elevations of 3,900 to 5,900 feet. The species is only known from Delta and Mesa counties, Colorado and Grand County in Utah (NatureServe 2011). There are three known occurrences within 2.5 miles of the centerline of Link C270 west of Mack, Colorado. One of these occurrences is along the centerline at the Colorado-Utah border.

Green River Greenthread (*Thelesperma caespitosum*) – BLM: Wyoming, Utah; USFS: Ashley National Forest

Green River greenthread occurs on white shale slopes and ridges of the Green River Formation at approximately 5,900 feet. It is endemic to Duchesne and Uintah counties in Utah and Sweetwater County, Wyoming, where the current known distribution includes Ashley National Forest, BLM, state, and private lands (UNPS 2012). Two known occurrences of Green River Greenthread are within 0.5 mile of Link U401 near Antelope Canyon in Duchesne County. Two occurrences from BLM Vernal Field Office are along the centerline in this same area. Three additional occurrences are within 3 miles of alternative routes in the same Bad Land Cliffs area of Duchesne County.

Hairy Townsend-daisy (*Townsendia strigosa* var. *prolixa*) – BLM: Utah

Hairy Townsend-daisy is an unrecognized variety of *T. strigosa* that was first collected at Chepeta Wells in the Uinta Basin (Welsh et al. 2008). The species inhabits salt desert shrub, mixed desert shrub, and pinyon-juniper communities between 4,790 and 6,220 feet (Welsh et al. 2008). Occurrences of the species are within 5 miles of reference centerlines in the Uinta Basin in the BLM Vernal Field Office.

Hamilton's Milkvetch (*Astragalus hamiltonii*) – BLM: Utah

Hamilton's milkvetch is endemic to the Uinta Basin in Uintah County, Utah. The species inhabits pinyon-juniper and desert shrub communities in the Duchesne River, Wasatch, Mowry Shale, Dakota, and other formations between 5,250 and 6,200 feet (UNPS 2012). BLM-mapped potential habitat for the species is crossed by Links U410, U391, and U390.

Horseshoe Milkvetch (*Astragalus equisolensis*) – BLM: Colorado, Utah

Horseshoe milkvetch is only known from Uintah County, Utah, and Mesa County, Colorado. The species inhabits sagebrush, shadscale, horsebrush, and other mixed desert shrub communities on the Duchesne River Formation at elevations of 4,800 to 5,200 feet (UNPS 2012). There is a large population that is crossed by the centerline of Link U321 and is within the 1-mile buffer of Link U380. The population is in the area of Horseshoe Bend along the Green River southwest of Jensen. It extends into the area within a triangle formed by Links U321, U322, U380, and U390. BLM-mapped potential habitat for the species is crossed by Links U390 and U310.

Huber's Pepperwort (*Lepidium huberi*) – BLM: Utah

Huber's pepperwort is a subshrub endemic to eastern Utah and western Colorado in the Uinta Mountains and on the East Tavaputs Plateau (NatureServe 2013). It grows in blackbrush, mountain brush, ponderosa pine, and spruce-fir communities in sand or silty sands derived from the Shiarump Member of the Chinle, Moenkopi, Park City, and Weber Sandstone formations (NatureServe 2013; UNPS 2012; Welsh et al. 2008). Occurrences of the species are within 5 miles of alternative routes in the Uinta Basin in the BLM Vernal Field Office.

Jones' Bluestar (*Amsonia jonesii*) – BLM: Colorado

Jones' bluestar occurs on clayey, sandy, and gravelly soils of dry open areas. The habitat is typically desert-steppe, rock gorges, or canyons at 4,500 to 5,000 feet (CNHP 2002; Spackman and Anderson 2002). A single occurrence in Colorado is within 1 mile of the centerline of Link C270 northwest of Mack, Colorado. The closest known occurrence in Utah is within 1.5 miles of Link U90 north of Jensen. There are no known occurrences on Jones' bluestar within 3 miles of any alternative routes more recent than 1965.

Laramie False Sagebrush (*Sphaeromeria simplex*) – BLM: Wyoming

Laramie false sagebrush occurs on gentle slopes or rims of dry, rocky limestone-sandstone plains in openings dominated by cushion plant communities in areas of more densely vegetated juniper, limber pine, big sagebrush, or mountain mahogany at elevations of 7,200 to 8,760 feet. The species is endemic to southeast Wyoming in the western foothills of the Laramie Range, Shirley Basin, and Shirley Mountains (Fertig and Thurston 2003). There are no known occurrences of the species in the Project area; however, there is modeled suitable habitat in the Project area. There is one area of medium likelihood suitable habitat within the 1-mile buffer of Link W370 northeast of Baggs, Wyoming. Other areas of suitable habitat are within 5 miles of the centerlines of Links W15, W21, and W30.

Large-fruited Bladderpod (*Lesquerella macrocarpa*) – BLM: Wyoming

Large-fruited bladderpod is a perennial forb endemic to a small area in the western rim of the Great Divide Basin and the Green River Basin. The species grows on barren or sparsely vegetated gypsum-clay hills and benches and clay flats from 7,200 to 7,700 feet (NatureServe 2013). WYNDD-modeled habitat for the species occurs in the Project area in Wyoming (WYNDD 2011).

Ligulate Feverfew (*Parthenium ligulatum*) – BLM: Colorado

Ligulate feverfew occurs on barren shale knolls at 5,400 to 6,500 feet in Utah and Colorado (Rio Blanco and Moffat counties) (CNHP 2002). In the vicinity of the Project area, the ligulate feverfew is known to occur in Rio Blanco County, Colorado. Only one known occurrence is in the Project area. It is along the centerline of Link C220 where this link crosses the White River. Two other occurrences are on the western edge of Raven Ridge approximately 2.5 miles southeast of Link U242.

Meadow Pussytoes (*Antennaria arcuata*) – BLM: Wyoming

Meadow pussytoes is a perennial forb endemic to the Great Basin in south-central Idaho, northeastern Nevada, and central and southwestern Wyoming. The species occurs on the edges and hummocks of moist meadows surrounded by sagebrush grassland communities from 4,900 to 7,900 feet (NatureServe 2013). WYNDD-modeled habitat for the species occurs in the Project area in Wyoming (WYNDD 2011). The species is also a USFS sensitive species, though it does not occur on national forests in the Project area.

Narrowleaf Evening Primrose (*Oenothera acutissima*) – BLM: Colorado

Narrowleaf evening primrose grows in sandy, gravelly, and rocky soils along drainage bottoms and in seasonally wet areas (CNHP 2002) associated with lodgepole pine, ponderosa pine, and Rocky Mountain juniper-mountain sagebrush communities (UDWR 1998). It is endemic to Utah (Uintah, Duchesne, and Daggett counties) and Colorado (Moffat County). In Utah, the species is present along Link U30. Data from BLM Vernal Field Office shows one known occurrence along the centerline of Link U30. The alternative routes are outside the known range of the species in Colorado.

Narrow-stem Gillia (*Gilia stenothrysa*) – BLM: Colorado

Narrow-stem gilia occurs on silty to gravelly loam soils derived from the Green River or Uinta Formations in grassland, sagebrush, mountain mahogany, or pinyon-juniper communities between 5,000 and 6,000 feet (CNHP 2002). Current known distribution is Mesa and Rio Blanco counties in Colorado (CNHP 2002) and in Uintah, Duchesne, Carbon, and Emery counties in Utah (NRCS 2013c). Occupied habitat and occurrences of the species are within a mile of Links C186 and C196 in the BLM White River Field Office in Colorado.

Ownbey's Thistle (*Cirsium ownbeyi*) – BLM: Wyoming

Ownbey's thistle primarily occurs on rocky, gravelly, and sandy soils in alcoves and side canyons at cliff bases, bedrock seeps, or riparian areas at elevations from 5,100 to 7,280 feet (UDWR 1998). Habitat includes sagebrush, juniper, and riparian communities (UNPS 2012). Current known distribution is in Daggett and Uintah counties, Utah, and Moffat County, Colorado; however, the species is not listed as sensitive by the BLM Colorado or Utah. A single occurrence is known in the Project area near Massadona, Colorado, at the junction of Links C175, C177, and C186. Three occurrences are between 1.0

and 1.5 miles of the centerline of Link U20 near Swallow Canyon along the Green River in Daggett County.

Persistent-sepal Yellowcress (*Rorippa calycina*) – BLM: Wyoming

Persistent-sepal yellowcress occurs on sandy soils near the high water lane of riverbanks and shorelines at 4,300 to 6,800 feet. Current known distribution includes Carbon and Sweetwater counties in Wyoming (Fertig et al. 1994). A single known occurrence is in the Project area along Link W30 southwest of Sinclair, Wyoming. Predicted suitable habitat is within the 1-mile buffer of many links in Wyoming. The likelihood of suitable habitat is low along the centerlines of Links W22, W26, W101, W102, W108, W125, W126, W128, W129, W490, and W491 but high along Link W30.

Piceance Bladderpod (*Lesquerella parviflora*) – BLM: Colorado

Piceance bladderpod occurs on shale outcrops of Green River Formation on ledges and slopes of canyons in open areas at 6,200 to 8,600 feet. It is a Colorado endemic that occurs in the Piceance Basin in Garfield, Rio Blanco, and Mesa counties (CNHP 2002). Only one known occurrence is in the Project area. It is in Hay Gulch along Link C104 approximately 10 miles west of Meeker. No other known occurrences are within 10 miles of alternative routes.

Psoralea Globemallow (*Sphaeralcea psoraloides*) – BLM: Utah

Psoralea globemallow occurs on the Tununk Member of the Mancos Shale, Buckhorn Conglomerate, Curtis Sandstone, Entrada Siltstone, Carmel, and Kaibab Limestone from 4,000 to 6,300 feet. Typical habitat is saline, gypsiferous soils in Zuckia-Ephedra, shadscale, eriogonum, lepidum, and pinyon-juniper communities (UNPS 2012). It is endemic to the San Rafael Swell of the Colorado Plateau on BLM and state lands (UDWR 1998). A single occurrence is known to occur in the Project area, approximately 0.7 mile from Link U730 west of the town of Green River.

Racemose Milkvetch (*Astragalus racemosus* var. *treleasei*) – BLM: Wyoming

Racemose milkvetch is a perennial forb found throughout the central United States (NatureServe 2013). In Wyoming, the species is endemic to the Green River Basin and eastern foothills of the Wyoming Range in Sublette and Uinta counties (Heidel and Fertig 2003). The species occurs on sparsely vegetated, shale-derived outwash flats and fluted Badland slopes (Heidel and Fertig 2003). WYNDD-modeled habitat for the species occurs in the Project area (WYNDD 2011).

Rock Hymenoxis (*Hymenoxys lapidicola*) – BLM: Utah

Rock hymenoxys is endemic to Uintah County in northeastern Utah and occurs in rock crevices in ponderosa pine-manzanita and pinyon-juniper communities between 6,000 and 8,100 feet (UNPS 2012). Occurrences of the species are within 5 miles of alternative routes in the Uinta Basin in the BLM Vernal Field Office.

Rollins’ Cat’s-eye (*Cryptantha rollinsii*) – BLM: Colorado

Rollins’ cat’s-eye occurs on white shale slopes of the Green River Formation from 5,300 to 5,800 feet. Habitat includes pinyon-juniper or cold desert shrubland communities. Current known distribution includes Wyoming, Utah, and Colorado (Moffat and Rio Blanco counties) (CNHP 2002). There are numerous known occurrences in the Project area in Rio Blanco County, Colorado. Along Link C196 there are nine known occurrences near the Rio Blanco-Garfield County border. In Wyoming, there is a single occurrence in the Project area, approximately 0.8 mile from Link W492 approximately 6 miles north of the Utah border.

Spanish Bayonet (*Yucca sterilis*) – BLM: Utah

Spanish bayonet is endemic to the Uinta Basin in Duchesne and Uintah counties, Utah. The species inhabits sandy soils in salt desert shrub, juniper, sagebrush, and shadscale communities at elevations from 4,790 to 5,800 feet (UNPS 2012). Five known occurrences are within 5 miles of alternative routes in Uintah County, Utah. There is a single known occurrence in the Project area located along Link U321 at the mouth of Walker Hollow near the Green River southwest of Jensen. Additional occurrences are within 2 miles of Link U400 south and east of the White River.

Stemless Beardtongue (*Penstemon acaulis* var. *acaulis*) – BLM: Wyoming; USFS: Ashley National Forest

Stemless beardtongue is a long-lived perennial forb endemic to southwestern Wyoming and northeastern Utah. It inhabits semi-barren substrates in pinyon-juniper and sagebrush-grass communities from 5,900 to 8,200 feet (NatureServe 2013). WYNDD-modeled habitat for the species occurs in the Project area in Wyoming (WYNDD 2011). The species is also a USFS sensitive species in the Ashley National Forest; however, no known occurrences of the species are found within 20 miles of the Project area in Utah (UNHP 2012).

Thompson’s Talinum (*Talinum thompsonii*) – BLM: Utah

Thompson’s talinum occurs on shallow, gravelly soils weathered from the Buckhorn Conglomerate (UDWR 1998), mainly composed of siliceous pebbles at 7,500 feet. Habitat includes pinyon-juniper and ponderosa pine communities. It is endemic to the Colorado Plateau in Emery County where it is known to occur on BLM and state lands (UNPS 2012). There are no known occurrences in the Project area; however, all known occurrences of Thompson’s talinum are on Cedar Mountain in Emery County within 5 miles of the alternative routes for Link U730.

Twisted Buckwheat (*Eriogonum contortum*) – BLM: Colorado

Twisted buckwheat occurs on the Mancos Shale Badlands at 4,500 to 5,100 feet in shadscale and other salt desert shrub communities. It occurs in Utah and Colorado (Garfield and Mesa counties) (CNHP 2002). Twisted buckwheat is known to occur within the 1-mile buffer of the Project area along links in Grand and Mesa counties.

Uinta Basin Spring-parsley (*Cymopterus duchesnensis*) – BLM: Colorado

Uinta Basin spring-parsley occurs on sandy clay and clay semi-barrens of Mancos and Morrison Shales derived from the Morrison, Uinta, Wasatch, and Green River Formations from 4,700 to 6,800 feet. The habitat is cold desert shrub, sagebrush, and juniper communities. The species is found in Utah (Uintah and Duchesne counties) and Colorado (Moffat and Rio Blanco counties) (CNHP 2002). The Uinta Basin spring-parsley occurs along alternative routes in Duchesne and Uintah counties, Utah. In Colorado, only one occurrence is within the 1-mile buffer of Link C196 along Salt Creek south of the Garfield-Mesa county line.

Untermann’s Daisy (*Erigeron untermannii*) – BLM: Utah; USFS: Ashley National Forest

Untermann’s daisy is endemic to the Tavaputs Plateau in Duchesne County, Utah (Welsh et al. 2008). It is found on calcareous shales and sandstones of the Uinta and Green River Formations in pinyon-juniper, mountain mahogany, limber pine, bristlecone pine (*Pinus longaeva*), and sagebrush communities between 7,000 and 9,400 feet (UNPS 2012). There are numerous known occurrences for the species along Link U432 in Ashley National Forest.

Wheeler's Angelica (*Angelica wheeleri*) – USFS: Uinta National Forest

Wheeler's angelica is endemic to Utah primarily along the Wasatch Front. It inhabits areas that are boggy or very wet typically in riparian communities, seeps, and springs from 5,380 to 10,000 feet (UNPS 2012) in Cache, Juab, Piute, Salt Lake, Sevier, and Utah counties (Welsh et al. 2008). Two occurrences are known from the junction of Salt Creek Canyon and McCune Canyon in Uinta National Forest approximately 5 miles from the alternative routes of Link U650.

White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) – FWS: BLM: Colorado and Utah

Regulatory Status

White River beardtongue was first recognized as a candidate species on November 28, 1983 (48 FR 53640) but immediate issuance of a proposed rule and timely promulgation of a final rule for the species was precluded by higher priority listing actions. The species received a listing priority number of 9 due to ongoing and imminent threats of a moderate magnitude for the subspecies population in a species assessment published in October 2011 (76 FR 66370-66439). White River beardtongue was proposed for listing as a Threatened species on August 6, 2013 (78 FR 47590-47611) and proposed critical habitat was established (78 FR 47532-47858). On August 6, 2014, FWS withdrew the proposed rule to list White River beardtongue based on the conclusion that the threats to the species were no longer are as significant as previously determined (79 FR 46042-46087). The FWS listing withdrawal was in response to a cooperative group of federal, state, county, and private stakeholders signing a Conservation Agreement and Strategy for Graham's Beardtongue and White River Beardtongue (Penstemon Conservation Team 2014). Pursuant to commitments in the Conservation Agreement, in July 2015, a mitigation plan was released providing detailed avoidance, minimization, and mitigation measures for White River beardtongue and habitat (Penstemon Conservation Team 2015).

Taxonomy and Life History

White River beardtongue is a member of the figwort family (UDWR 2005b). It was first described as a unique species, *Penstemon albifluvis* in 1982 by J.L. England. However, in 1984 Arthur Cronquist and others redefined it as a variety of Garrett's penstemon (*Penstemon scariosus*), and changed the name to *Penstemon scariosus* var. *albifluvis. Penstemon scariosus* var. *albifluvis* differs from a typical *Penstemon scariosus* by exhibiting a shorter corolla and anther hairs and has a reduced basal leaf rosette. In addition, *Penstemon scariosus* var. *albifluvis* occurs at lower elevation oil shale barrens near the White River along the Utah-Colorado state-line (FWS 2007b).

White River beardtongue is an herbaceous perennial, about 6 to 20 inches tall. It has multiple clusters of upright stems with opposite leaves that are linear to linear-lanceolate. The flowers bloom in late May to June when the woody caudex reaches more than 4 centimeters. The flowers are light blue to lavender in color with seeds produced by late June. Due to the presence of the woody caudex, the plant is believed to be long-lived (FWS 2007b).

Distribution and Habitat Requirements

Known populations of White River beardtongue are limited to a 20-mile arc that extends from Raven Ridge west of Rangely in Rio Blanco County, Colorado, to the vicinity of Willow Creek in Uintah County, Utah (78 FR 47595)

White River beardtongue is endemic to the oil shale barrens found in semi-barren openings in Pinyon-juniper-desert shrub or desert shrub communities on substrates composed of fine textured soils and shale fragments weathered from the Green River Formation of the Uinta Basin of northeastern Utah and adjacent Colorado. This geologic formation covers more than 100 square miles of area in Utah and Colorado; however, the species currently occupies less than 1 percent of the extent of oil shale barrens available in Colorado and Utah. It is frequently found on white or red soil at an elevation of 5,000 to 6,680 feet. Associated vegetation includes shadscale, rabbitbrush, Indian ricegrass, saline wildrye, sagebrush, and Barneby's thistle (*Cirsium barnebyi*) (FWS 2007b).

Primary Threats to Survival

The 2013 proposed rule to list Graham's beardtongue and White River beardtongue as Threatened identified present and potential energy exploration and development as the predominant threat to the continued existence of these species (78 FR 47590). Additional threats are invasive weeds and climate change. Livestock grazing, unauthorized collection, road maintenance and construction, wildfire, and small population size were determined not to be threats to these species at present (78 FR 47602-47605).

Occurrence in the Project Area

White River beardtongue is in Uintah County, Utah, and western Rio Blanco County, Colorado, near the White River to the vicinity of Evacuation Creek and in the vicinity of Willow Creek (FWS 2011c). Populations are located along the White River, near the Utah-Colorado border, near Links U240 and C220. The nearest conservation area for White River beardtongue is approximately 5 miles from Link U242 in Utah.

J.6.2 Special Status Fish and Wildlife

J.6.2.1 Federally Listed Threatened, Endangered, Candidate, and Proposed Fish and Wildlife Species

Black-footed Ferret (*Mustela nigripes*) – FWS: Endangered, Experimental/Non-essential; State: Wyoming, Colorado, Utah

Regulatory Status

The black-footed ferret was designated as endangered by the Bureau of Sport Fisheries and Wildlife in 1966. The species was subsequently listed as threatened with extinction under the Endangered Species Preservation Act on March 11, 1967 (32 FR 4001) and as endangered under the ESA on June 2, 1970 (35 FR 8491-8498). No critical habitat has been designated for the species. Eight reintroduced black-footed ferret populations have been designated as Nonessential Experimental under Section 10(j) of the ESA. The FWS initiated a 5-year species status review for the black-footed ferret on July 7, 2005 (70 FR 39326-39327). In the 2008 status review summary, the FWS recommended no change in status and a Recovery Priority Number of 2C (FWS 2008b).

On December 17, 2012, FWS announced the availability of the *Draft Black-footed Ferret Programmatic Safe Harbor Agreement and Environmental Assessment* for comment by the public and federal, state, tribal, and local agencies. The safe harbor agreement is part of a larger new multi-agency partnership to expand black-footed ferret recovery efforts. The comment periods for the safe harbor agreement closed on February 22, 2013.

The current Black-footed Ferret Recovery Plan was approved in 1988 (FWS 1988b). This plan replaced the 1978 recovery plan, which was drafted when no extant, wild black-footed ferrets were thought to exist (Linder et al. 1978). The 1988 recovery plan does not include any delisting criteria for the species (FWS 1988b). FWS published the Black Footed Ferret Spotlight Species Action Plan on August 19, 2009. The action plan provided some interim guidance for the recovery of the species. An updated recovery plan is expected to be available in 2014.

Taxonomy and Life History

The black-footed ferret was first formally described by John Audubon and James Bachman in 1851 (Clark 1986). The species is 1 of 14 members of the genus *Mustela* and 1 of 3 species in the Subgenus *Putorius*, which also includes the Siberian polecat (*Mustela eversmanni*) and the European polecat (*M. putorius*) (Hillman and Clark 1980). The black-footed ferret is endemic to North America and is the only ferret species native to the Americas (FWS 2008b). There are no recognized subspecies.

The black-footed ferret co-evolved with prairie dogs (*Cynomys* spp.) in North America and is considered to be a prairie dog obligate. The ferret is entirely dependent on prairie dog colonies, utilizing prairie dog burrows for shelter and den sites and preying almost exclusively on prairie dogs (Biggins 2006). Female black-footed ferrets become sexually mature at 9 months with prime breeding age occurring from 1 to 3 years old (Clark 1989). Ferrets breed between March and May and females can have multiple estrus cycles. Gestation lasts 42 to 45 days and kits are born between April and June (Hillman and Clark 1980). Average litter size is 3 kits (Forrest et al. 1988). Kits generally disperse in late September and early October, with males typically dispersing to different prairie dog towns and females remaining near their mother’s home range (Clark 1989).

Black-footed ferrets are solitary except during the breeding season and when mothers are caring for kits. Ferrets are strongly nocturnal and spend much of the day below ground among several burrows (Clark 1989). The average lifespan of wild black-footed ferrets is 3 to 4 years.

Distribution and Habitat Requirements

As a prairie dog-obligate, the black-footed ferret is associated exclusively with prairie dog colonies in the grasslands and semi-desert shrublands of North America. The historical distribution of the black-footed ferret was closely associated with the ranges of the black-tailed prairie dog (*Cynomys ludovicianus*), the white-tailed prairie dog (*C. leucurus*), and the Gunnison’s prairie dog (*C. gunnisoni*). The species historical range has been estimated at nearly 250 million acres across Arizona, Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming as well as Alberta and Saskatchewan (Clark 1989).

The significant reduction in the distribution and abundance of prairie dogs throughout North America during the twentieth century resulted in the near extirpation of the black-footed ferret (Esch et al. 2005). The species was thought to be extinct until the discovery of a small population near Meeteetse, Wyoming in 1981. After declining to 18 individuals, all members of the Meeteetse population were captured and placed in a captive breeding program in 1987 (FWS 1988b). Since 1991, 18 black-footed ferret reintroduction projects have been conducted in eight states and Mexico (FWS 2008b). Experimental, non-essential populations have been established at eight reintroduction sites in the United States including:

- Shirley Basin, Wyoming (56 FR 41473)
- Conata Basin/Badlands, South Dakota (59 FR 42682)
- Charles M. Russell National Wildlife Refuge, Montana (59 FR 42696)
- Aubrey Valley, Arizona (61 FR 11320)
- Coyote Basin, Colorado/Utah (63 FR 52823)
- Cheyenne River Sioux Reservation, South Dakota (65 FR 60879)
- Rosebud Sioux Reservation, South Dakota (68 FR 26498)

Reintroduction projects not utilizing the experimental, non-essential designation have been completed in Chihuahua, Mexico (2001), Lower Brule Indian Reservation, South Dakota (2006), Wind Cave National Park, South Dakota (2007), Espee Ranch, Arizona (2007), Logan County, Kansas (2007), Northern Cheyenne Indian Reservation, Montana (2008), and Vermejo Ranch, New Mexico (2008)(FWS 2008b).

Four reintroduction sites (Aubrey Valley, Cheyenne River Indian Reservation, Conata Basin, and Shirley Basin) currently meet the population objectives for reintroduced populations outlined in the 1988 Recovery Plan and are considered successful by the (FWS 2008b). Two populations (Badlands and Rosebud Sioux Reservation in South Dakota) are improving; four (Charles M. Russell National Wildlife Refuge, Coyote Basin, Wolf Creek, and Janos, Mexico) are marginal; and the remaining populations are either unsuccessful or too recent to categorize. The FWS currently estimates there are 422 breeding adult black-footed ferrets across all reintroduced populations (FWS 2008b).

Primary Threats to Survival

The historical decline in the black-footed ferret occurred concurrently with the reduction in the distribution and abundance of prairie dogs in North America. The primary causes of the species decline included conversion of native grassland habitats to agriculture, large scale eradication of prairie dogs, and disease (Esch et al. 2005). Despite several successful reintroductions, the black-footed ferret remains one of the most endangered mammals in the North America.

The current threats to species recovery include habitat loss and modification, disease, and the lack of adequate regulatory mechanisms (FWS 2008b). The FWS estimates that approximately 97 percent of suitable habitat from pre-European times has been lost, and the fragmentation/loss of large prairie dog colonies currently limits the ability of the remaining habitat to support ferrets. Sylvatic plague affects both ferrets and prairie dogs, and the disease continues to be a primary threat to the black-footed ferret. Plague has caused the suspension of reintroduction efforts at three sites and limited recovery at two other sites (FWS 2008b). In 2008, plague was documented in prairie dogs at Conata Basin, which supports the most successful reintroduced ferret population. Finally, the lack of regulatory mechanisms to protect prairie dog colonies from control and eradication efforts as well as recreational shooting currently represents a significant threat to the recovery of the black-footed ferret.

Occurrence in the Project Area

All known black-footed ferret populations are descended from reintroduced, captive-bred animals. There are two reintroduction sites in the study area: the Shirley Basin/Medicine Bow Management Area (Shirley Basin) and the Northwestern Colorado/Northeastern Utah Black-footed Ferret Experimental Population Area (ExPA).

The Shirley Basin site encompasses approximately 2,068 square miles in Carbon, Albany, and Natrona counties. This area is approximately 20 miles northeast of Rawlins, Wyoming. The first release of captive-raised black-footed ferrets occurred in the Shirley Basin in 1991. Since that date, 534 individuals have been released at this site. The site was estimated to support approximately 203 individuals in 2011 and represents the second largest black-footed ferret population in North America (FWS 2008b). Although the Shirley Basin supports the only known extant population of wild black-footed ferrets in Wyoming, there are numerous white-tailed prairie dog complexes in the planning areas for both the BLM Rawlins and Rock Springs Field Offices that represent suitable habitat for the black-footed ferret. However, the number of prairie dog complexes that are large and dense enough to support a population of black-footed ferrets is low.

The ExPA encompasses portions of Rio Blanco and Moffat counties in Colorado, Sweetwater County in Wyoming, and Uintah and Duchesne counties in Utah. The ExPA has been separated into the Northwestern Colorado Experimental Population Sub-Area and the Northeastern Utah Experimental Population Sub-Area. In the Northwestern Colorado Sub-Area, the Little Snake Black-footed Ferret Management Area and the Wolf Creek Management Area were established as specific reintroduction sites. The Little Snake area is located in northwest Moffat County, Colorado, along the Colorado/Wyoming border. However, ferrets have not been released into this area due to observed decline in white-tailed prairie dog populations. The Wolf Creek area is located in Moffat and Rio Blanco counties in northwest Colorado. Ferret releases in the Wolf Creek NEP northeast of Rangely, Colorado, were initiated in 2001, and 254 individuals have been released at this site. The Wolf Creek population reached at least 16 individuals (FWS 2008b), but no recent counts are available. The population had, to some degree, merged with the Coyote Basin population in Utah (78 FR 23948-23949). Further reintroductions are not currently being implemented due to a recent plague epidemic in white-tailed prairie dog populations.

In the Northeastern Utah Sub-Area, the Coyote Basin Black-footed Ferret Management Area was established as the specific reintroduction site. The Coyote Basin area is located in Uintah County, Utah, along the Utah/Colorado border and includes the Snake John Reef Subcomplex and the Coyote Basin Subcomplex. Since 1999, 424 black-footed ferrets have been released into the Coyote Basin NEP. Reproduction was confirmed in Coyote Basin in 2000, and the population was estimated to have reached 25 individuals (FWS 2008b). However, the population rapidly declined to possibly a single individual shortly thereafter (78 FR 23948-23949).

Bonytail (*Gila elegans*) – FWS: Endangered; State: Colorado, Utah

Regulatory Status

The bonytail was first proposed for listing as an endangered species under the ESA on April 24, 1978, because of alteration and destruction of habitat that had greatly reduced populations and would continue to threaten their existence (43 FR 17375). The FWS determined the species to be endangered and released the final rule on April 23, 1980 (45 FR 27710).

Critical habitat for the bonytail and other listed Colorado River fish was proposed in 1993 (58 FR 6578-6589), and designated in 1994 (59 FR 13374-13400). The designation included seven reaches of the Colorado River system, including portions of the Colorado, Green, and Yampa rivers in the Upper Basin and the Colorado River in the Lower Basin, totaling 312 river miles. Designated critical habitat for the bonytail in the Project area includes portions of the upper Colorado River (northeast of Wayne County, Utah), portions of the Green River (north of Wayne County, Utah), and the Yampa River. On April 18, 2007, the FWS initiated a 5-year species status review (72 FR 19549). The bonytail is also included in the Lower Colorado River Multi-Species Conservation Program (2004).

A recovery plan for the bonytail was published on August 1, 2002. To address unique threats and site-specific management actions, the entire population of the bonytail has been reduced to upper and lower basin recovery units. The upper basin recovery subunit is composed of the Green River and upper Colorado basin and the lower basin recovery unit includes the mainstem and tributaries of the Colorado River from Lake Mead downstream to the southerly International Boundary with Mexico. The species may be downlisted from endangered to threatened, if during a 5-year period: (1) one (upper basin recovery subunit) and two (lower basin recovery subunit) genetically and demographically viable, self-sustaining populations of more than 4,400 adults are maintained; (2) a genetic refuge is maintained in a suitable location in the lower basin recovery unit such as Lake Mohave or Havasu; and (3) site-specific management tasks to minimize or remove threats have been identified, developed and implemented. Delisting can occur if all three goals listed above are maintained for an additional 3 years past downlisting and a necessary level of protection is attained (FWS 2002c).

Taxonomy and Life History

The bonytail, also referred to as the bonytail chub in the 1980 listing rule and other documents (FWS 2002a), originally was collected and described from the Zuni River, New Mexico, in 1853 by Baird and Girard of the Sitgreaves Expedition (Minckley and Marsh 2009). The bonytail is a member of a unique assemblage of 35 fish species native to the Colorado River Basin. Identification of juvenile bonytail versus the similar, closely related roundtail chub (*Gila robusta*) can be particularly difficult, and some historical distribution records are questionable as a result (FWS 2002a).

The bonytail is a relatively large minnow (family Cyprinidae) endemic to the Colorado River Basin. The bonytail and several related species have unique morphological adaptations to the flow regimes of the historic Colorado River mainstem and tributaries. Adult bonytails are characterized by a small head and an elongated, laterally compressed body with a long, thin caudal peduncle and a slightly humped back (Nevada Department of Wildlife 2007). Adult bonytails can reach a maximum size of 22 inches (Bozek et al. 1984). The scales are small, reduced in number over part of the fish, and may be embedded and the eyes are relatively small—all thought to be adaptations to high-suspended sediment loads and turbidity that characterized the Colorado River system prior to the construction of dams (Arizona Game and Fish Department [AZGFD] 2001). The narrow tail terminates in a V-shaped caudal fin (FWS 2002a).

Natural reproduction of the bonytail was last documented in the Green River in Dinosaur National Monument in the early 1960s (Vanicek and Kramer 1969). The species is a broadcast spawner; in the wild females released an estimated 10,000 adhesive eggs while hatchery females yield an average of 25,000 eggs (Hamman 1982). In Lake Mohave and the lower basin, spawning occurs in May, whereas spawning occurs in June and July in the upper basin. By 2002, more than 83,000 hatchery-reared bonytails had been released into Lake Mohave (Valdez and Clemmer 1982). In rivers, adults eat primarily terrestrial insects, plant debris, and algae, and the young eat aquatic insects. In lakes, the bonytail has been observed feeding on algae and plankton (AZGFD 2001).

Distribution and Habitat Requirements

Formerly abundant throughout the Colorado River and its larger tributaries, the bonytail has been found from the Green River in Wyoming and Utah; the Yampa and Gunnison rivers in Colorado; the Colorado River in Arizona, Colorado, Nevada, and California; San Juan River in New Mexico; and the Gila and Salt rivers in Arizona (FWS 2002c). Presently, the bonytail is one of the most critically imperiled North American freshwater fishes. The only known wild bonytails are an unknown number of large, old adults in Lake Mohave on the lower Colorado River and scattered individuals in the upper Colorado River basin (AZGFD 2001). Known locations include the Yampa River in Dinosaur National Monument, the Green River in Gray and Desolation canyons, the Colorado River near Black Rocks (Kaeding et al. 1986) and Cataract Canyon (59 FR 13374), Lake Mohave near the Arizona-Nevada border, and Lake Havasu in Arizona and California (FWS 2002c).

The bonytail was historically common in warm-water reaches of larger rivers from Mexico to Wyoming. Little is known, however, about the specific habitat requirements of bonytails because the species was extirpated from most of its historic range prior to extensive fishery surveys (FWS 2002c). Current habitat is found in mid-sized to large rivers, usually near deep swift water, in flowing pools and backwaters, over mud or rocks (Valdez et al. 1990). It is hypothesized, based on available distribution data, that flooded bottomland habitats are important growth and conditioning areas for bonytails, particularly as nursery habitats for young (FWS 2002c).

Primary Threats to Survival

Threats to the species include streamflow regulation, habitat modification or destruction, and competition with, and predation by, nonnative fish species. Historically, the species inhabited the large turbid mainstream rivers of the Colorado River Basin that alternated between swift water canyons characterized by torrential rapids and slow, meandering, sand bottomed stretches. The Colorado River has been greatly altered by dams and diversions eliminating much of the bonytail’s original habitat. Currently, the lower Colorado River basin is an alternating series of reservoirs and cold tailwaters that do not provide the warm water temperature needed for bonytails to spawn. Predation by introduced species is also likely to have been an important factor in the decline of the species. Species such as bass, sunfish, catfish, red shiner, and the redside shiner have been suggested to be the main problem (45 FR 27710). Stocking efforts have been adjusted to release larger size classes of bonytails in an attempt to reduce the risk of predation on juveniles, but even the largest individuals regularly stocked (approximately 10 inches) appear to be susceptible to predation by striped bass (Morone saxatilis) in reservoirs (Karam and Marsh 2010).

Occurrence in the Project Area

The bonytail is endemic to the Colorado River Basin, but no reproducing populations are thought to persist in the wild (FWS 2002c). The last documented capture of a bonytail in the Project area was during the late 1980s in Desolation/Gray Canyon (Carbon and Uintah counties, Utah). Designated critical habitat for the bonytail in the Project area includes portions of the upper Colorado River (northeast of Wayne County, Utah), portions of the Green River (north of Wayne County, Utah), and the Yampa River. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect bonytail or its habitat.

Boreal Toad (*Bufo boreas boreas*) – FWS: Petitioned; BLM: Wyoming, Colorado, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Colorado, Utah

Regulatory Status

On April 12, 2012, the FWS announced a 90-day finding on a petition to list either the Eastern population or the Southern Rocky Mountain population of the boreal toad as a distinct population segment (DPS) that is endangered or threatened under the ESA and to designate critical habitat. Based on the review, FWS found that the petition presented substantial scientific or commercial information indicating that listing the as a DPS may be warranted. FWS initiated a 12-month review of the status of the eastern population to determine if listing it as a DPS is warranted.

Distribution and Habitat Requirements

The western (boreal) toad occurs in the montane areas associated with permanent water bodies in a variety of habitats including riparian, mountain shrub, mixed conifer, and aspen-conifer assemblages. It breeds in small pools, beaver ponds, reservoirs, and the backwaters and side channels of creeks and rivers. The Project area is outside the known range and distribution of the species in Wyoming and Colorado (Keinath and McGee 2005), but is within the known range of the species in Utah (Hogrefe et al. 2005).

Primary Threats to Survival

The species is threatened by pollution, pesticide use, habitat loss, fragmentation, degradation, and disease. Populations in Utah have declined and extant populations are irregularly distributed within the historic range (Hogrefe et al. 2005).

Occurrence in the Project Area

Three known occurrences are within 1 mile of alternative routes in Utah. One is south of Helper along Link U522; another is at Kyune along Link U524; and the third is 4 miles north of Nephi along Link U650. The species is known to occur in Strawberry Reservoir, which lies within 3 miles of Link U420. The boreal toad may be present in the Project area in the Book Cliffs and San Pitch, Uinta, and Wasatch mountains and valleys.

Canada Lynx (*Lynx canadensis*) – FWS: Threatened; USFS: Ashley, Uinta, Wasatch-Cache; State: Wyoming, Colorado, Utah

Regulatory Status

The North Cascades population of the Canada lynx in Washington State was petitioned (as the North American Lynx) for ESA listing in 1991, but the petition was not found to present substantial information that listing was warranted (57 FR 46007-46012). The species was petitioned again, for the entire population in the 48 contiguous states, in 1994 (Biodiversity Legal Foundation 1994). The petition additionally requested the Canada lynx population in the southern Rocky Mountains receive an emergency listing. The FWS found the petition presented substantial information that listing may be warranted, but that an emergency listing was not warranted, and noted that a 12-month review was ongoing as required by a court settlement (59 FR 44123-44124). That review found that listing the Canada lynx was not warranted (59 FR 66507-66509).

In 1997, the FWS again reviewed the status of the Canada lynx, determined that the population in the 48 contiguous states qualified as a DPS, determined that listing was warranted but precluded by higher listing priorities, and added the Canada lynx to the list of candidate species (62 FR 49398-49397). The species was proposed for listing in 1998 (63 FR 36994-37013), and was listed as threatened in 2000 (65 FR 16053-16086). At that time, the DPS boundary was listed as including 14 states currently or historically occupied by the species.

Critical habitat for the Canada lynx was proposed in 2005 in Maine, Minnesota, Montana, and Washington (70 FR 68294-68328) and designated in 2006 in Minnesota, Montana, and Washington (71 FR 66008-66061). The proposed critical habitat in Maine was removed in the final rule. A revision to the critical habitat rule was proposed in 2008 (73 FR 10860-10896), and a final rule revising the designated critical habitat was issued in 2009 (74 FR 8616-8702). The revision increased the area of all previously designated critical habitat units (CHU), created a CHU in Maine, and created an additional CHU in southern Montana and western Wyoming in the Greater Yellowstone Ecosystem. A second revision was proposed in 2013 (78 FR 59429-59474) that increased the area in previously designated CHUs and defined the Contiguous United States DPS as including all Canada Lynx in the 48 contiguous states, wherever found. A final rule revising the DPS boundary and designated critical habitat was issued in 2014 (79 FR 54781-54846). No designated critical habitat is present in the Project area (79 FR 54781-54846). The nearest CHU (Greater Yellowstone Area) is in northwestern Wyoming.

Taxonomy and Life History

The Canada lynx is one of two North American members of the genus Lynx, the other being the Bobcat (L. rufus), a much more widespread, generalist species. Two additional species are present in Europe and northern Asia (Wilson and Reeder 2005). Several subspecies of the Canada lynx may be described, ranging from three (Wilson and Reeder 2005) to eight (Tumlison 1987). However, the ESA listing for the species does not address subspecies, as all individuals in the 48 contiguous states (the ESA-listed DPS) are a single subspecies.

Canada lynx are predators, specializing in other mammals and especially snowshoe hares (Lepus americanus). Other prey may be taken opportunistically. However, Canada lynx population size closely follows increases and declines of snowshoe hare populations in a regular cycle that, absent external causes of Canada lynx population declines, appears to be the major factor controlling Canada lynx population size (Stenseth et al. 1997). As such, their habitat preferences also overlap strongly with snowshoe hares, and both typically are found in boreal forests with a dense understory, and with deep snow in winter. Snowshoe hares are important prey rangewide, but Canada lynx may take alternate prey more often in the southern part of their range in the ESA-listed DPS (Roth et al. 2007; Murray et al. 2008).

Canada lynx in the southern portion of their range require larger home ranges than northern populations, likely due in part to the patchiness of high-elevation habitat in the Rocky Mountains. Canada lynx home ranges measured in Wyoming and Montana ranged from 40 to 85 square miles, based on total annual use. However, that area is divided approximately in half by winter and summer use (Squires and Laurion 1999). Reintroduced Canada lynx in Colorado used home ranges averaging 106 to 181 square miles, while individuals in Maine used home ranges averaging between 12 and 26 square miles (79 FR 54781-54846).

Canada lynx den in dense cover, such as downed trees, and give birth in mid-summer to litters averaging 2.8 kittens (79 FR 54781-54846; Tumlison 1987). Although they mature within approximately 1 year, most do not reproduce until their second year, and reproduction is higher in years of high snowshoe hare abundance.

Distribution and Habitat Requirements

Canada lynx are widespread across northern North America, largely following the distribution of boreal forests across Canada and Alaska, extending into mixed hardwood forests in New England and the Great Lakes region, and extending south into the Rocky Mountains and Pacific Northwest in montane coniferous woodlands (Agee 2000).

The ESA-listed DPS, which includes all Canada lynx in the 48 contiguous states wherever they are found, is primarily restricted to four regions, each with some measure of connectivity to the core range of the species in Canada. The New England population is strongest in parts of Maine, but individuals occasionally are reported from Vermont and New Hampshire, and trapping records indicate the species has been found rarely as far southwest as New York and Pennsylvania. The Great Lakes population is located primarily in northern and eastern Minnesota with additional records throughout Wisconsin and Michigan. The Rocky Mountains population extends from Idaho and Montana into Wyoming and Utah and now includes the reintroduced population in Colorado. A population also is present in the northern Cascades in Washington (79 FR 54781-54846). For the Rocky Mountains population in particular, connectivity to Canada is somewhat constrained (Squires et al. 2013), and maintaining that connectivity may be critical to the survival of the population (Schwartz et al. 2004).

Primary Threats to Survival

Canada lynx at the southern edge of their range are found in patchy blocks of suitable habitat at relatively high elevations, which are separated by low-elevation valleys without suitable habitat. Canada lynx in Wyoming, Montana, and Idaho typically are found at elevations above 4,100 feet, while those in Colorado typically are found above 9,500 feet (79 FR 54781-54846). This avoidance of low-elevation valleys contributes to metapopulation structure, where dispersal among populations can be critical to avoiding genetic effects of small population size and stochastic events in populations. Highways, agriculture, and other types of development can reduce dispersal rates across the landscape.

When determining that listing the Canada lynx was warranted, the primary factor identified was a lack of existing regulatory mechanisms to guide maintenance of suitable habitat for the species (65 FR 16053-16086). Logging, fire management, other forestry practices, recreation, and travel management can all contribute to declines in populations that are inherently sensitive due to their small size. For example, Canada lynx appeared to strongly avoid forests subject to thinning treatments (Squires et al. 2013).

Hybrids between Canada lynx and bobcats have been recorded in Minnesota, although it is unclear whether the resulting hybrids were fertile and could cause genetic pollution of Canada lynx populations, or sterile and lost reproductive opportunities or potential competitors (Schwartz et al. 2004).

Canada Lynx Occurrence in the Project Area

Areas of potential Canada lynx habitat are crossed by alternative routes considered for the Project. However, only one occurrence has been noted in the Project area and within the past 30 years. Lynx hair samples were collected in Manti-La Sal National Forest along Link U630. This occurrence is crossed by the centerline of Link U630.

Colorado Pikeminnow (*Ptychocheilus lucius*) – FWS: Endangered; State: Colorado, Utah

Regulatory Status

Colorado pikeminnow was listed as endangered (as the Colorado River squawfish) under the Endangered Species Preservation Act (ESPA) on March 11, 1957 (32 FR 4001) and as endangered under the ESA on its passage in 1973 (United States Code (U.S.C.), Title 16, Sections 1531-1544). Two reintroduced Colorado pikeminnow populations have been designated as Nonessential Experimental Populations (NEP) under Section 10(j) of the ESA (50 FR 30188). An additional reintroduced population has been proposed for designation as an NEP (52 FR 32143), but the ruling has never been finalized. A 5-year review was initiated on April 18, 2007 (72 FR 19549) and completed in 2011 (FWS 2011a).

The current Colorado Pikeminnow Recovery Plan was approved August 28, 2002. To address unique threats and site-specific management actions, the entire population of the Colorado pikeminnow has been reduced to three recovery subunits of the upper Colorado River Basin: the Green River, the upper Colorado River, and the San Juan River subbasins. The species may be downlisted from endangered to threatened, if during a 5-year period: (1) one genetically and demographically viable, self-sustaining population of more than 2,600 adults is maintained in the Green River subbasin recovery unit; (2) a self-sustaining population of at least 700 adults is maintained in the upper Colorado River subbasin recovery unit; (3) a target number of 1,000 age 5+ fish is established in the San Juan River subbasin recovery unit; and (4) site-specific management tasks to minimize or remove threats have been identified, developed and implemented. Delisting can occur if the three goals listed above are maintained for an additional 7 years past downlisting and a necessary level of protection is attained (FWS 2002a).

Taxonomy and Life History

The Colorado pikeminnow is the largest North American member of the minnow family (*Cyprinidae*). The estimated maximum total size is 6 feet and 80 pounds, although averages are believed to be less than 3 feet and between 4 to 9 pounds (Miller 1961). It is one of three large cyprinids of the genus *Ptychocheilus* native to the western United States. The species has a flattened head and elongated body. They are adapted to life in rivers with seasonally variable flow and high silt loads. The mouth is large and nearly horizontal with slender teeth adapted for grasping and holding prey. It is the top native carnivore of the Colorado River system. Small individuals feed primarily on waterfleas, copepods, and chironamids. Large adults prey mainly on other fish (FWS 2002a).

The Colorado pikeminnow spawns under decreasing flow regimen with increasing temperatures in summer when the water temperature is at least 68 to 72 degrees Fahrenheit (°F), generally after June. The pikeminnow makes an extensive spawning migration, with one recorded individual traveling 127 miles. They are broadcast spawners that deposit their eggs on cobble substrates in riffles and runs. Eggs hatch in less than 1 week when larvae then enter stream drift and are transported downstream for about 6 days, traveling an average distance of 99 miles to reach low gradient nursery areas. The Colorado pikeminnow becomes mature in 5 to 7 years and may live 30 years or more. Natural reproduction has been recently observed in the Green, Yampa, upper Colorado, Gunnison, and San Juan rivers (FWS 2002a).

Distribution and Habitat Requirements

The Colorado pikeminnow was once widespread in the large rivers of the Colorado River and major tributaries, but its historical distribution was much greater than at present. The last capture of a wild Colorado pikeminnow in the lower Colorado River was in 1975 (Minckley et al. 2003). The three remaining wild populations are found in the Green, upper Colorado, and San Juan River subbasins.

In the Green River Subbasin, the Colorado pikeminnow is present in the following rivers:

- Green River (from Lodore Canyon to the Colorado River confluence)
- Yampa River (from Craig, Colorado, to the Green River confluence) (FWS 2002b)
- Little Snake River (Wyoming to the Yampa River confluence) (Marsh et al. 1991)
- White River (Taylor Draw Dam to the Green River confluence)
- Price River (lower 89 miles above Green River confluence)
- Duchesne River (lower 6 miles above the Green River confluence)

In the Upper Colorado River Subbasin, the Colorado pikeminnow is present in the following rivers:

- Upper Colorado River (from Palisade, Colorado, to Lake Powell inflow)
- Gunnison River (lower 33 miles above Colorado River confluence)
- Dolores River (lower 1 mile above Green River confluence)

In the San Juan River Subbasin, the species is found only in the San Juan River (from Shiprock, New Mexico, to the Lake Powell inflow) (FWS 2002b).A refuge population was successfully established at the Dexter National Fish Hatchery in Dexter, New Mexico. From 1981 to 1990, as many as 623,000 Colorado pikeminnow from the refuge population were reintroduced to two designated non-essential experimental population locations in the Gila River drainage of Arizona (50 FR 30188):

- Salt River (Gila County) – from Roosevelt Dam upstream to U.S. Highway 60 Bridge
- Verde River (Gila and Yavapai counties) – from Horseshoe Dam upstream to Perkinsville (50 FR 30188)

A rule was proposed in 1987 to designate an additional non-essential experimental population in the Colorado River Basin, but has never been finalized:

- Lower Colorado River (Yuma and LaPaz counties, Arizona and Imperial, Riverside, and San Bernadino counties, California) – between Imperial and Parker Dams (52 FR 32143)

The Colorado pikeminnow is found in warm-water reaches of the Colorado River mainstem and larger tributaries. Adults have been found in various habitats including deep, turbid strongly flowing water; eddies; runs; flooded bottoms; and backwaters. Lowlands inundated during spring high flow appear to be important habitats for health and reproductive conditioning as the fish use these habitats to offset winter stress and replenish energy stores needed for long migrations and spawning. In winter, adults are most commonly found in shallow, ice-covered shoreline areas (FWS 2002a).

Adults migrate long distances (Tyus and McAda 1984) and seek white-water canyons as breeding grounds. They appear to select river canyons receiving groundwater discharge from sandstone/limestone seeps and return to the same spawning site every year. Only two principal spawning sites have been identified, both in the Green River Subbasin. One site is near Three Fords Canyon in Gray Canyon of the Lower Green River and the other is in the lower 20 miles of the Yampa River (FWS 2002a). After hatching, the larvae drift downstream, and then move to shoreline areas and backwaters. Postlarval pikeminnow occupy shallow, ephemeral backwaters formed in late summer by receding water levels (UDWR 1997).

Primary Threats to Survival

Threats to the Colorado River Basin endangered fishes include streamflow regulation, habitat modification or destruction, and competition/predation from nonnative fish species. Historically, the species inhabited the large turbid mainstream rivers of the Colorado River Basin that alternated between swift water canyons characterized by torrential rapids and slow, meandering, sand bottomed stretches. The Colorado River has been greatly altered by dams and diversions eliminating much of the Colorado pikeminnow original habitat. Currently, the lower Colorado River basin is an alternating series of reservoirs and cold tailwaters that do not provide the warm water temperature needed for the pikeminnow to spawn. Predation by introduced species is also likely to have been an important factor in the decline of the species. Species such as bass, sunfish, catfish, red shiner, and the redside shiner have been suggested to be the main problem as they are efficient predators that prey on the eggs and young (45 FR 27710).

Occurrence in the Project Area

The Colorado pikeminnow is endemic to the Colorado River Basin. In the Project area, there are two remaining populations of the Colorado pikeminnow located in the Green and upper Colorado River Basins. Designated habitat in the Project area includes portions of the upper Colorado and Green rivers north of Wayne County, Utah and the Price, Gunnison, White, Little Snake, Duchesne, and Dolores rivers. The only two known spawning sites of the species are also in the Project area near Three Fords Canyon in the Gray Canyon area of the Green River (Carbon and Uintah counties) and the lower 20 miles of the Yampa River (Moffat County, Colorado). Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect Colorado pikeminnow or its habitat.

Gray Wolf (*Canis lupus*) – FWS: Species of Concern; State: Colorado, Utah

Regulatory Status

The gray wolf has undergone a lengthy, complex history regarding its listing status under the ESA. Although this section does not present a full history of all listing actions and related court decisions, a summary is provided of the original listing history of the species and recent determinations that affect the listing status of the species in the Project area.

The timber wolf, considered at the time an eastern subspecies of the gray wolf (*C. l. lycaon*), was listed under the ESPA in 1967 (32 FR 4001). The northern Rocky Mountain wolf (*C. l. irremotus*) was listed under the ESCA in 1973 (U.S.C. Title 16, Sections 1531-1544), and the species was listed under the ESA in 1978 throughout the contiguous United States, acknowledging that previous subspecies names and boundaries were likely inaccurate (43 FR 9607-9615).

An NEP was designated in 1994 to allow for the reintroduction of the gray wolf into the northern Rocky Mountains, including the Greater Yellowstone Area (59 FR 60266-60281). The NEP boundary encompassed all of Wyoming, as well as southern Montana and southeastern Idaho.

The FWS designated the Northern Rocky Mountains population of gray wolves as a DPS in 2008, and delisted the DPS after determining recovery objectives had been met (73 FR 10514-10560). The gray wolf listing, including the NEP designation in Wyoming, was reinstated in response to a court order in 2008 (73 FR 75356-75371). In 2009, the FWS published a rule delisting gray wolves in the Northern Rocky Mountains DPS, except for the state of Wyoming where the species remained listed as an NEP (74 FR 15123-15188). The delisted portion of the Northern Rocky Mountains DPS was listed again in response to a court order in 2010 (75 FR 65574-65579). In 2011, the Northern Rocky Mountains DPS was delisted by legislation, although gray wolves in Wyoming remained listed as an NEP (76 FR 25590-

25592) until they were delisted in 2012 (77 FR 55530-55604). The listing of the gray wolf in Wyoming was reinstated in 2014, in response to a court order[1].

The gray wolf is not known to be present in Colorado or Utah, but sightings are reported anecdotally on occasion. These states were not a part of the Northern Rocky Mountains DPS, so the species remained listed as endangered. The FWS proposed to delist the gray wolf rangewide in 2013, but this rule has not been finalized to date (78 FR 60813-60815).

Taxonomy and Life History

Taxonomy of North American wolves has been subject to frequent revision and contradiction, as indicated above in the history of the species' listing under the ESA, and uncertainty continues to this day. Although up to 24 New World and 8 Old World subspecies have been described by some authors (Mech 1974, Wilson and Reeder 2005), many of these were considered invalid by later authors, and some have become extinct. As few as three or four subspecies may now be recognized in North America (78 FR 60813-60815). One former subspecies is now recognized as the eastern (or timber) wolf (C. lycaon). The red wolf (C. rufus) of the southeastern United States, listed as endangered under the ESA, is closely related to the eastern wolf, and both species appear to be more closely related to coyotes (C. latrans) than to the gray wolf (Wilson et al. 2000). One possible evolutionary and biogeographical explanation is that the common ancestor of the coyote, eastern wolf, and red wolf dispersed to and diverged in North America from the Eurasian gray wolf. These species later came into contact when gray wolves reached North America during a more recent interglacial period.

All North American wolf species are social and form packs of mostly related individuals led by a dominant male-female pair. Litter size averages six pups, which are raised in sheltered dens by the female. Gray wolves are mature at approximately 1 year, but may not reproduce until their second year. Gray wolves are almost exclusively carnivorous, cooperating to take large grazing mammals but also opportunistically capturing small mammals and birds (78 FR 60813-60815), and even fish in some populations (Darimont and Reimchen 2002). Gray wolves will prey on livestock directly and also will scavenge on livestock carcasses (Morehouse and Boyce 2011).

Distribution and Habitat Requirements

The gray wolf is currently found south of Canada only in northern Mexico, a few areas in the Rocky Mountains (reintroduction sites in Montana, Wyoming, and Idaho), northwestern Great Lakes region, and Cascade Mountains of northern Washington. Formerly, gray wolves were much more numerous in the Rocky Mountain states than in the southwestern United States. The gray wolf is a habitat generalist, with large stable home ranges and exclusive pack territories. Wolf packs generally consist of a breeding pair and offspring. Travel patterns across home ranges are influenced by elevation, topography, prey distribution, and climatic conditions; travel routes along roads, trails, and survey lines for efficiency are common (Paquet and Carbyn 2003). In addition to avoiding roads and human activity, the gray wolf selects den sites (natal and secondary) according to proximity of stable food and water resources; selecting for proximity to ungulate prey species and often denning along ungulate migration routes. Den sites also are located relative to adjacent wolf pack proximity. However, territory overlap with other predators occurs. Limiting factors include climate, prey density, human-induced mortality and disease (Paquet and Carbyn 2003).

---

[1] 13-698 – Defenders of Wildlife et al v. Jewell et al. United States 6th Circuit District Court, Eastern District of Tennessee.

Primary Threats to Survival

Human conflicts drive the primary threats to the ESA-listed population of the gray wolf, and human-caused deaths can be the majority of mortality for dispersing or resident wolves (Boyd and Pletscher 1999). Although wolves are generalists in their habitat and prey preferences to a degree, and tolerant of some human presence, the degree of disturbance, dispersal barriers, habitat modification, and conflicts with residents and livestock producers has rendered most of the lower and middle elevations within the range of the gray wolf unsuitable for their recovery. High road densities have been shown to increase gray wolf deaths from road mortality and shooting and decrease the probability of an area being occupied by gray wolves (Wydeven et al. 2001; Kaartinen et al. 2005). However, gray wolves also will travel opportunistically on low-use roads and trails that cross their home ranges (Whittington et al. 2005).

Management for the recovery of gray wolves in montane habitat in the Rocky Mountains often is seen as being in conflict with cattle and sheep grazing, as well as with hunting interests that are dependent on robust elk and deer populations (78 FR 60813-60815). In most recent cases where gray wolves have been delisted in a portion of their range, a hunting program or policy allowing lethal removal of gray wolves taking livestock has been implemented by the states.

Occurrence in the Project Area

Suitable habitat for the species occurs throughout the Project area. There are currently no known resident gray wolves in Utah or Colorado, although sightings are reported anecdotally on occasion. In the summer of 2014, a single gray wolf originating in northern Idaho dispersed through the Uinta Mountains in Utah, although its tracking collar failed and its current location is unknown (Prettyman 2014). Near the Project area in 2003, a single gray wolf was reported near Baggs, Wyoming. This wolf was a confirmed identification by Wyoming Game and Fish Department biologists; however, an exact location is not known.

Greater Sage-grouse (*Centrocercus urophasianus*) – FWS: Candidate; BLM: Wyoming, Colorado, Utah; State: Wyoming, Colorado, Utah

Regulatory Status

The greater sage-grouse is regulated by a complex and evolving array of federal and state regulations.

Federal Regulations and Policies

On March 4, 2010, the greater sage-grouse became a candidate species for listing as threatened or endangered under the ESA of 1973 (75 FR 13909). Prior to this rule, the FWS had listed the Washington state population of sage-grouse as a candidate for federal listing in 2001 (66 FR 22984). In both rules, the FWS stated that formal listing for the species is warranted, but is precluded by other higher priority listing actions. As a condition of a court approved settlement agreement, the FWS must make a final listing determination by the end of fiscal year 2015.

In advance of the 2015 listing determination, the FWS convened a Conservation Objectives Team (COT) of state experts and FWS representatives to develop conservation objectives to address greater sage-grouse habitat threats identified in the 2010 12-month finding. The final COT report identified key areas for conservation efforts (Priority Areas for Conservation, or PACs), identified key threats, and identified the extent to which the threats need to be reduced so that the species would not require the protections provided by the ESA (FWS 2013a).

The Bi-state Distinct Population Segment (DPS) of the greater sage-grouse, which is located in western Nevada and eastern California, was proposed for listing as a threatened species under the ESA in 2013 (79 FR 45420-45421) with critical habitat (78 FR 64328-64355)..

BLM Regulations and Policies

The greater sage-grouse is listed as a sensitive species by the BLM state offices in all three states crossed by the Project. Current BLM sage-grouse management is guided by the documents listed below.

BLM sensitive species are managed according to guidance provided by BLM Manual 6840. BLM's policies do not require consultation or conference on candidate species, but these species may be addressed in a BA as appropriate for the BLM's management objectives and the conservation of the species.

The BLM has issued national-level and state-level Instructional Memorandums (IM) that provide additional guidance for the management of sage-grouse. The BLM is currently revising applicable land-use plans to incorporate sage-grouse conservation measures.

In November 2004, the BLM Washington Office (WO) released its National Sage-Grouse Habitat Conservation Strategy (BLM 2004), which provides a framework for future conservation efforts by setting out broad goals and specific actions to meet those goals.

In March 2010, the BLM Washington Office issued Washington Office IM 2010-071 Gunnison and Greater Sage-grouse Management Considerations for Energy Development (BLM 2010b). These management considerations supplement the National Sage-Grouse Habitat Conservation Strategy. This IM identifies management actions necessary at some sites to ensure environmentally responsible exploration, authorization, leasing, and development of renewable and nonrenewable energy resources, including transmission projects, within the ranges of the Gunnison sage-grouse and greater sage-grouse.

In December 2011, the BLM Washington Office issued WO IM 2012-043 Greater Sage-Grouse Interim Management Policies and Procedures (BLM 2011b), which provides interim conservation measures applied to sage-grouse and sage-grouse habitats while BLM land-use plan revisions are occurring, and WO IM 2012-044 BLM National Greater Sage-Grouse Land Use Planning Strategy (BLM 2011c), which directs the BLM to consider all applicable conservation measures when revising or amending its resource management plans in greater sage-grouse habitat.

In February 2012, the BLM Wyoming State Office issued WY IM 2012-019 Greater Sage-Grouse Habitat Management Policy on Wyoming Bureau of Land Management Administered Public Lands including the Federal Mineral Estate (BLM 2012c). This IM provides guidance to BLM Wyoming Field Offices on sage-grouse habitat management for proposed activities and resource management planning.

U.S. Forest Service Regulations and Policies

USFS Manual 2670 contains legal authorities, objectives, policies, responsibilities, instructions, and guidance that direct the USFS when planning and executing assigned programs and activities. In October 2012, the USFS published *Interim Conservation Recommendations for Greater Sage-grouse and Greater Sage-grouse Habitat for Regions 1, 2, and 4*. These recommendations supplement the recommendations for sage-grouse contained in the *Chief's Letter to Regional Foresters in Regions 1, 2, 4, 5 and 6 for Sage-grouse and Sagebrush Conservation* (July 2010). These recommendations also promote consistency in management of activities on USFS land with BLM IM 2012-043. Additionally, the USFS is currently revising applicable LRMP to incorporate sage-grouse conservation measures.

State Regulations and Policies

In June 2003, Wyoming issued a statewide *Greater Sage-Grouse Conservation Plan* (State of Wyoming 2003). The plan was developed by the Wyoming Sage-Grouse Working Group and provides goals, tasks, and recommended management practices to guide sage-grouse planning and management efforts. In June 2011, the Governor of State of Wyoming issued Executive Order 2011-5, *Greater Sage Grouse Core Area Protection* (State of Wyoming: Office of the Governor 2011), which revised previous designations of sage-grouse core population areas, provided guidance specific to the siting and permitting of projects in core areas and established utility corridors in core areas.

In January 2008, the CPW issued the *Colorado Greater Sage-grouse Conservation Plan* (Colorado Greater Sage-grouse Steering Committee 2008). The purpose of the plan is to facilitate the conservation of greater sage-grouse and their habitats in Colorado. It identifies conservation measures and strategies to achieve this purpose. The plan is guided by local sage-grouse working groups. The *Conservation Plan for Greater Sage-grouse in Utah* was approved by the Governor in April 2013. The plan establishes incentive-based conservation programs for conservation of sage-grouse on private, local government, and School and Institutional Trust Lands Administration lands and regulatory programs on other state- and federally managed lands. The Conservation Plan also establishes sage-grouse management areas and implements specific management protocols in these areas. In addition to the conservation plan, UDWR published a *Greater Sage-Grouse Management Plan* in 2009 (UDWR 2009b). The management plan guides management of sage-grouse in Utah and seeks to protect, maintain and improve sage-grouse populations and habitats.

Wyoming Sage-grouse Local Working Groups

The Project would affect two conservation areas overseen by local sage-grouse working groups in Wyoming (from east to west): Bates Hole/Shirley Basin and South-central. These working groups have developed a non-binding conservation plan for sage-grouse management. All of the Wyoming working groups are in the process of updating their plans to bring them into compliance with Executive Order 2011-5 and WY IM 2012-019. The Wyoming working groups also are updating their plans with any other new information, changes, and/or occurrences.

Colorado Sage-grouse Local Working Groups

The Project would affect two conservation areas overseen by local sage-grouse working groups in Colorado: Northwest Colorado and Piceance/Parachute/Roan Creek.. These working groups have developed a non-binding conservation plans for sage-grouse management.

Utah Sage-grouse Local Working Groups

The Project would affect three conservation areas overseen by local sage-grouse working groups in Utah: Uinta Basin, Strawberry Valley and Castle County. These working groups have developed a non-binding conservation plan for sage-grouse management.

Taxonomy and Life History

Greater sage-grouse are the largest grouse found in North America and are uniquely adapted to and dependent on sagebrush (Artemisia spp.) for survival. In the 1990s, researchers documented morphological, behavioral and genetic evidence suggesting that sage-grouse in southwestern Colorado and southeastern Utah were distinct from sage-grouse elsewhere across their range (Hupp and Braun 1991; Kahn et al. 1999; Oyler-McCance et al. 1999; Young et al. 1994). In 2000, the Gunnison sage-grouse (C. minimus) was recognized formally by the American Ornithologists' Union (AOU) as a distinct species, with sage-grouse across the remainder of the range being renamed greater sage-grouse (C. urophasianus).

Although as far back as the 1940s researchers have argued for subspecies classification between sage-grouse in eastern (C. u. urophasianus) and western (C. u. phaios) portions of the species' range (Aldrich 1946; Aldrich 1963; Aldrich and Duvall 1955) Morphological, behavioral, and genetic differences among some populations have been documented (Aldridge et al. 2008; Oyler-McCance et al. 2005; Taylor and Young 2006), though individuals are not differentiated at a distinct geographic boundary. The Bi-state DPS in eastern California and western Nevada, proposed for ESA listing, initially was petitioned for listing as a DPS of the subspecies C. u. phaios (Institute for Wildlife Protection 2002), although the proposal to list the DPS found that C. u. phaios was not a valid subspecies (75 FR 13910-14014).

Sage-grouse are polygamous and exhibit consistent breeding behavior on ancestral strutting grounds (leks) annually (Patterson 1952). During the breeding season, males display in early morning and evening hours, traveling up to 1.3 miles (Ellis et al. 1987) from the lek to day-use feeding and resting areas. Sage-grouse females retire into the vicinity of their nest location within a few days of being bred and remain relatively sedentary until they nest (Patterson 1952). A majority of sage-grouse females nest within 4 miles of the lek where bred (Colorado Greater Sage-grouse Steering Committee 2008). No concealment strategies are attempted at the nest except that afforded by natural cover and the female's cryptic plumage coloration pattern (Rassmussen and Griner 1938).

Egg laying takes 7 to 10 days, incubation lasts 25 to 29 days, and average clutch sizes are between 6.5 and 9.1 eggs (Patterson 1952; Schroeder et al. 1999). Reproductive effort (nesting propensity) estimates in sage-grouse range from 63 to 100 percent (Connelly et al. 2011); however, research on follicular development indicates that between 91 and 98 percent of females breed annually (Braun 1979). Nesting success in sage-grouse ranges from 15 to 86 percent and is typically around 50 percent (Connelly et al. 2011). Re-nesting rates less than 40 percent are typically reported (Connelly et al. 2011); however, Schroeder (1997) reported re-nesting rates greater than 80 percent in Washington. Sage-grouse are relatively long-lived tetraonids, thus renesting may not be beneficial after weighing the benefits and costs of the increased parental investment in a second clutch (Bergerud 1988).

Sage-grouse chicks are precocial and move immediately following hatching to search for food (Patterson 1952); females generally rear their broods for the first 2 to 3 weeks in the immediate vicinity of their nest (Berry and Eng 1985; Connelly 1982). Most chick mortality occurs prior to the flight stage (2 to 3 weeks) when decreased mobility increases vulnerability to predation and starvation (Autrienth 1981; Patterson 1952). Sage-grouse broods remain in sagebrush habitats until range desiccation induces them to move to habitats still supporting succulent vegetation (Fischer et al. 1993; Neel 1980; Peterson 1970; Wallestad 1971). Brooding females may remain in upland habitats if suitable microsite conditions (e.g., swales, ditches, and springs) are found (Fischer et al. 1996; Hausleitner 2003; Wallestad 1971) or if weather conditions result in forbs remaining succulent in these habitats throughout the summer (Holloran 1999).

The beginning of late brood-rearing coincides with forb desiccation but also with changes in chick diets from predominantly insects to forbs (Drut et al. 1994; Klebenow and Gray 1968; Patterson 1952; Peterson 1970). Late brood-rearing habitats generally are used from July to early September (Connelly et al. 1988; Dalke et al. 1963; Gill and Glover 1965; Patterson 1952; Savage 1969; Wallestad 1971). Fall is a transitional period for sage-grouse (Wambolt et al. 2002), during which sage-grouse diets change from a variety of forbs, insects, and sagebrush to predominantly sagebrush (Gill 1965; Leach and Hensley 1954; Patterson 1952; Rassmussen and Griner 1938; Wallestad et al. 1975).

Sage-grouse populations can exhibit either sedentary or migratory behavior. Sedentary populations increase flock size and move from meadows into nearby sagebrush habitats during winter (Autrienth 1981). Migratory populations often travel 50 to 99 miles to winter ranges (Patterson 1952), but some only travel short distances during fall migrations (Eng and Schladweiler 1972). A precipitation event (usually snow) or a drop in the temperature initiates migration, which begins in late August (in advance of snow accumulation) and may continue into December (Berry and Eng 1985; Connelly et al. 1988; Dalke et al. 1960). During periods of early, severe winter snowstorms sage-grouse may begin migrations to winter habitats; but at the onset of milder weather later in the fall, they may return to sites adjoining late brood-rearing habitat (Patterson 1952).

Distribution and Habitat Requirements

Sage-grouse were historically distributed throughout the Intermountain and northwestern United States and southern regions of three Canadian provinces (Schroeder et al. 2004). Pre-settlement distributions included western Nebraska and the Dakotas; all of Montana, Idaho, Wyoming, Nevada and Utah; northwestern New Mexico; northern Arizona; western Colorado; portions of eastern California, Oregon and Washington; and southern British Columbia, Alberta, and Saskatchewan. Sage-grouse currently occupy 56 percent of the historical distribution, and are no longer found in Arizona, New Mexico, Nebraska, or British Columbia (Schroeder et al. 2004).

The Western Association of Fish and Wildlife Agencies recently defined seven sage-grouse management zones that reflect ecological similarities and population linkages instead of political boundaries (Knick and Connelly 2011; Stiver et al. 2006).

- Management Zone I (Great Plains) includes sage-grouse populations in eastern Montana, northeastern Wyoming, North and South Dakota, Saskatchewan, and Alberta
- Management Zone II (Wyoming Basin) consists of populations mostly in Wyoming and northwestern Colorado but also including south-central Montana, and far southeastern Idaho and northeastern Utah
- Management Zone III (Southern Great Basin) includes populations primarily in southern Nevada and Utah but includes parts of California
- Management Zone IV (Snake River Plains) includes sage-grouse populations primarily in Idaho, northern Nevada, and eastern Oregon but also includes northwestern Utah and southwestern Montana
- Management Zone V (Northern Great Basin) includes populations in Oregon, California, and Nevada
- Management Zone VI (Columbia Basin) includes populations in Washington
- Management Zone VII (Colorado Plateau) includes populations in Utah and Colorado

The highest densities of sage-grouse occur in Management Zones I, II, IV and V (Connelly et al. 2004).

Sage-grouse population persistence has been linked to the availability of sagebrush habitat; the dependence of the species on sagebrush through all seasonal periods has been well documented (Connelly et al. 2004). Sage-grouse are considered a landscape-scale species as populations generally inhabit and rely on large, interconnected expanses of sagebrush (Connelly et al. 2004). Connelly et al. (2011) report that sage-grouse populations typically occupy habitats with a diversity of species and subspecies of sagebrush interspersed with a variety of other habitats (e.g., riparian meadows, agricultural lands, grasslands, sagebrush habitats with some conifer or deciduous trees); these habitats usually are intermixed in a sagebrush-dominated landscape and are used often by sage-grouse during certain times of the year (e.g., summer) or during certain years (e.g., above-normal snow pack).

Populations generally exhibit one of three potential migratory patterns (Connelly et al. 2000): (1) nonmigratory, where sage-grouse do not make long-distance movements between or among distinct seasonal ranges; (2) one-stage migratory, where sage-grouse move between two distinct seasonal ranges (e.g., distinct winter areas and integrated breeding and summer areas); or (3) two-stage migratory, where sage-grouse move among three distinct seasonal ranges (e.g., distinct winter, breeding and summer areas). Although migratory populations may use a large area, there are specific seasonal habitats used by the population that may be spatially isolated; corridors of sagebrush-dominated habitats are used by individuals to move among these seasonal ranges (Connelly et al. 2003). For nonmigratory populations, Connelly et al. (2003) suggest that seasonal habitats generally are well interspersed with no major anthropogenic barriers (e.g., reservoirs) between habitats.

Leks are situated in areas with minimal shrub cover adjacent to relatively dense sagebrush stands where strutting male exposure is maximized but escape, thermal, and feeding cover is readily available (Gill 1965; Patterson 1952). An important characteristic for leks may be their proximity and configuration with nesting habitat (per theories of lek evolution and mating behavior) (Gibson 1996). In nonmigratory populations, leks generally are found in nesting habitat, and may be situated near the center of seasonal ranges (Eng and Schladweiler 1972; Wallestad and Pyrah 1974; Wallestad and Schladweiller 1974). In migratory populations, female dispersal routes between wintering and nesting areas may influence the locations of leks (Bradbury et al. 1989; Dalke et al. 1963; Gibson 1996; Wakkinen et al. 1992).

Selection of specific habitat features in a landscape by nesting sage-grouse has been extensively documented. Across the range of the species, nesting sage-grouse consistently select areas with more sagebrush canopy cover and taller grasses compared to available habitats and tall, dense herbaceous cover—including residual (e.g., standing dead) herbage—in selected dense sagebrush stands generally tends to increase the probability of a successful hatch (Hagen et al. 2007; Holloran 2005). Recent research suggests sage-grouse select nesting habitat at multiple spatial scales: selection is for sagebrush-canopy cover at the site scale; for high-density sagebrush and flat topography at the patch scale; and against conifer, grassland, and riparian cover at larger scales (Doherty 2008).

Females show strong fidelity to nesting areas, generally selecting nest locations within 0.3 to 0.6 miles from previous years' nests (Fischer et al. 1993; Holloran et al. 2005). Additionally, fidelity of female offspring to their natal home ranges has been observed (e.g., yearling females nesting close to their natal nest), suggesting that family groups of females may inhabit relatively distinct areas (Thompson 2012). Thermal and predator protection of young chicks (e.g., dense sagebrush stands) (Thompson et al. 2006) and food availability (e.g., insects and succulent forbs) (Drut et al. 1994; Johnson and Boyce 1990) are important for chick survival during the early brood-rearing period (hatch through 2-weeks post-hatch). Protein-rich foods are additionally required for optimal development 10 to 45 days post-hatch (Johnson and Boyce 1990).

Stand structure and food availability are characteristics most frequently associated with habitat selection by sage-grouse during the summer (Aldridge and Brigham 2002; Autrienth 1981; Klebenow 1969). Sage-grouse may use a variety of sagebrush habitats and other habitats (e.g., riparian, wet meadows and irrigated agricultural fields adjacent to sagebrush habitats) during summer, but tend to select feeding habitat near edges of sagebrush-dominated security cover types (Dunn and Braun 1986). Hagen et al. (2007) suggested sage-grouse select areas with increased forb and grass cover during late brood-rearing periods (greater than 6 weeks post-hatch).

Selection of wintering habitats by sage-grouse is influenced by snow depth and hardness, topography (i.e., elevation, slope, and aspect), and vegetation height and density (Batterson and Morse 1948; Gill 1965; Greer 1990; Schroeder et al. 1999). During the winter, sage-grouse rely almost exclusively on sagebrush exposed above the snow for forage and shelter (Connelly et al. 2000; Crawford et al. 2004; Patterson

1952; Rassmussen and Griner 1938; Remington and Braun 1985; Robertson 1991; Schroeder et al. 1999). In certain areas and during certain winters when snow depths are sufficient to cover most sagebrush plants, suitable winter habitat (e.g., areas where plant exposure above the snow is maintained) may be the most limiting seasonal habitat (Beck 1977; Patterson 1952) with sage-grouse over a broad summering area congregating on smaller, traditional wintering grounds (Beck 1977; Berry and Eng 1985).

Primary Threats to Survival

Current sage-grouse breeding populations throughout western North America are approximately 17 to 47 percent lower than those during the late 1960s, and populations declined on average 2 percent annually from 1965 to 2003 (Connelly and Braun 1997). Connelly et al. (2004) reported that long-term population declines prior to 1994 in states historically supporting the largest sage-grouse populations (Colorado, Idaho, Montana, Oregon, Wyoming) averaged 30 percent; in states and Canadian provinces historically supporting smaller populations, breeding populations declined by an average of 37 percent. Lek sizes and average rates of change in male numbers declined between 1965 and 2007 for 6 of the 7 Management Zones, and 2 Management Zones—Columbia Basin (VI) and Colorado Plateau (VII)—are projected to decline below an effective population size of 500 individual males in the next 30 years if current population trends continue (Garton et al. 2011). For the majority of management zones (86 percent), population change was best described by declining carrying capacity through time (Connelly et al. 2011), supporting conclusions that habitat quantity and quality are continuing to decline across the sagebrush biome (Connelly et al. 2004).

Potential factors contributing to sage-grouse declines range-wide include many human-caused impacts on the species and its habitats. The changes to the sagebrush biome that have occurred since pre-settlement conditions can be grouped into three categories: habitat loss, habitat degradation, and habitat fragmentation (Braun 1998). More specifically, the total area dominated by sagebrush habitats has been reduced; the composition and structure of (i.e., the vegetation and soils) sagebrush communities has been negatively altered, including increased abundance and performance of invasive species and decreased abundance and performance of native species; and roads, power lines, fences, energy developments, urbanization, and other anthropogenic features have transformed large expanses of habitat into smaller pieces (Connelly et al. 2004; Fahrig 2003). Other factors such as hunting, predation, and drought also have been implicated (Braun 1998). The relative importance of these individual factors most likely has varied over the range of the sage-grouse as well as through time.

The primary contributors to permanent habitat loss in the sagebrush biome include agricultural conversion and urbanization, although one could convincingly argue that the ultimate result of the domination of a site by invasive annual grasses constitutes permanent habitat loss. As an example, cultivated agriculture (primarily cropland) covers more than 88,800 square miles (56.8 million acres; 11 percent) of the total land area in the estimated historic distribution of sage-grouse (Knick et al. 2011). Areas converted to croplands generally are those with deeper loamy soils able to be irrigated, while sagebrush remains in arid areas where soils and topography are limiting to crops; agriculture has replaced 75 percent of the shrub steppe in deep soils, suggesting a majority of the most productive sage-grouse habitats no longer exist (Connelly et al. 2004). Agricultural development also can indirectly influence sage-grouse by providing access to sagebrush habitats for predators such as domestic cats, red fox (Vulpes vulpes) and corvids (Connelly et al. 2004).

Habitat degradation is exemplified by the long-term consequences of overgrazing by livestock at the turn of the nineteenth century as well as the proliferation of invasive annual grasses (e.g., cheatgrass [*Bromus tectorum*]), especially in the Great Basin. Miller et al. (2011) estimate that approximately 65 percent of the Great Basin ecoregion has conditions that put it at moderate to high risk of cheatgrass invasion. Dominance of a site by cheatgrass shortens fire-return intervals, which, as most species of sagebrush are killed by fire, ultimately results in the conversion of a sagebrush-dominated site to a cheatgrass monoculture providing little to no habitat value for sage-grouse (Epanchin-Niell et al. 2009; Knapp 1996; Rowland et al. 2010). The major influence of livestock grazing on sage-grouse habitat is the potential to cause a transition from an ecological state dominated by sagebrush and cool season bunchgrasses to a site dominated by sagebrush and rhizomatous grasses, invasive annual grasslands or woodlands—all providing sage-grouse with either lower-quality or no habitat value (Pyke 2011).

Unmanaged overuse of sage-grouse habitats by wild horses and ungulates (e.g., elk, deer, and pronghorn) can have negative effects similar to livestock grazing. The transition to a lower-quality condition can occur in 10 to 15 years at any given site under heavy uncontrolled grazing; and once a site has transitioned to a grazing-tolerant state, it will not revert without active restoration, even if the mechanism causing the conversion is eliminated (Connelly et al. 2004).

Habitat fragmentation is generally the result of the addition of anthropogenic infrastructure and human activity in sagebrush habitats (e.g., roads, transmission lines, energy developments, fences). Within an 7-square-mile area, the mean sagebrush patch size was more than nine times as large in occupied sage-grouse range as compared to areas where sage-grouse had been extirpated (Wisdom et al. 2011). Paved roads exist in most sagebrush regions in densities up to or greater than 3 miles per square mile; less than 5 percent of the sage-grouse range is greater than 1.6 miles from a paved road, and almost no area of sagebrush is greater than 4.3 miles from a paved road (Knick et al. 2011). Disturbance to sage-grouse from energy development has been linked to human activity levels (Dzialak et al. 2012). Noise associated with human activity may result in habitat avoidance and thus functional habitat loss and fragmentation. Of 14 studies investigating the response of sage-grouse populations to energy development, none indicated a positive influence (Naugle et al. 2011). The indirect effects of energy development on sage-grouse populations have been documented at distances up to 6.8 miles (Johnson et al. 2011).

Occurrence in the Project Area

All of the alternative routes cross sage-grouse habitats in Management Zones II and III, with the potential to cross habitats in Management Zone VII also existing. In Wyoming, the alternative routes cross two core areas (WGFD 2010b) and the entire length of each alternative route traverses occupied sage-grouse habitat. Active sage-grouse leks are throughout sage-grouse habitats in Wyoming and all of the alternative routes cross within 4 miles of known active leks (WGFD 2012). In Colorado, approximately 30 to 50 percent of each alternative route crossed preliminary priority sage-grouse habitats (CPW 2012a), and the majority of the alternative routes traverse preliminary general sage-grouse habitat. Active sage-grouse leks are primarily located in preliminary priority sage-grouse habitats in Colorado and all of the alternative routes cross within 4 miles of known active leks in Moffat County (CPW 2012b). In Utah, populations of sage-grouse are more isolated with many distinct areas supporting sage-grouse occurring throughout the Project area. All alternative routes in Utah cross occupied sage-grouse habitat to some extent, with the northern alternative routes crossing between 5 and 10 distinct population areas and the southern-most routes crossing between 3 and 4 distinct population areas (UDWR 2011c). Active sage-grouse leks are distributed throughout sage-grouse habitats in Utah and all of the northern alternative routes cross within 4 miles of known active leks (UDWR 2013a). The southern-most alternative routes in Utah would not cross within 4 miles of active sage-grouse leks (UDWR 2013a).

Humpback Chub (*Gila cypha*) – FWS: Endangered; State: Colorado, Utah

Regulatory Status

The humpback chub was listed as endangered under the ESPA on March 11, 1967 (32 FR 4001). With the 1973 passage of the ESA, which superseded the ESPA, the species retained its endangered status. On April 18, 2007, the FWS initiated a 5-year species status review (72 FR 19549), which was completed in

2011 (FWS 2011b). The humpback chub also is included in the Lower Colorado River Multi-Species Conservation Program (2004).

The current recovery plan for the humpback chub was published in 1990 and amended in 2002. The species may be downlisted from endangered to threatened, if during a 5-year period: (1) the numbers of adults in the six extant populations do not decline significantly; (2) the recruitment of age-3 naturally produced fish equals or exceeds mean annual adult mortality for each of the sex extant populations; (3) two genetically and demographically viable, self-sustaining populations of more than 2,100 adults are maintained; and (4) site-specific management tasks to minimize or remove threats have been identified, developed and implemented. Delisting can occur if the four goals listed above are maintained for an additional 3 years past downlisting and a necessary level of protection is attained (FWS 2002d).

Taxonomy and Life History

The humpback chub was first described by Miller in 1946. Prior to that time, the humpback chub was considered part of the *Gila robusta* (roundtail chub) complex.

The humpback chub is a medium-sized unusually shaped fish of the minnow family (*Cyprinidae*). The head is narrow, flattened and generally dorsally concave with a long fleshy snout and small eyes. The mouth is inferior-subterminal. There is a pronounced dorsal hump that begins at the dorsal origin of the gill covers, protrudes anteriorly, and then ends at the origin of the dorsal fin. It is believed that the odd shape of the fish aids in fast water by pushing the fish to the bottom where the current would be slower and would expend less energy to hold position. The grooves in the hump also may aid in directing water to the fish’s gills (FWS 2002d).

The humpback chub evolved in seasonally warm and turbid waters and is highly adapted to unpredictable hydrologic conditions that occurred in the Colorado River System prior to extensive damming. Spawning of the humpback chub occurs in spring shortly after peak flow (Gorman and Stone 1999). In the Little Colorado River of Arizona, individuals moved upriver in early spring and slowly back downstream post-reproductively. Humpback chubs are opportunistic omnivores that are known to eat insects, crustaceans, plants, seeds, and occasionally small fish, reptiles, and amphibians depending on availability (FWS 2002d).

Distribution and Habitat Requirements

Historically, the humpback chub was found throughout the Colorado River basin from western Colorado and Wyoming to northern Arizona in the Colorado, Green, lower Yampa, and White rivers. Currently, there are six known self-sustaining populations consisting of 7,300 to 13,800 wild adults. Five occur in the Upper and one on the Lower Basin Recovery Units. The Upper Recovery Unit consists of populations on the Colorado River (Black Rocks and Westwater Canyon in Utah and Cataract Canyon of Colorado), one population on the Yampa River (Yampa Canyon in Colorado), and on the Green River (Desolation/Gray Canyons of Utah). The only population in the Lower Basin Recovery Unit occurs on the mainstem Colorado River in Marble and Grand Canyons and the Little Colorado River. A small number of humpback chub have been captured in the Green River in Dinosaur National Monument, but are not considered to be a self-sustaining population (FWS 2002d).

Humpback chubs are found in large rivers in a variety of habitats. Adults have been found in deep turbulent currents, shaded canyon pools, areas under shaded ledges in moderate current, riffles, and eddies (FWS 1994b). Young and spawning adults are generally found in sandy runs and backwaters (FWS 1990b). in the Colorado, Green, Lower Yampa, and White rivers.

Primary Threats to Survival

The current primary threats to the humpback chub are loss fragmentation, and modification of habitat due to construction and operation of the Hoover Dam. The dam has led to impoundment of streams causing stream inundation, reduced water temperatures, reduced spring flow, and increased daily fluctuation in flow. Decreased temperatures and flow reduction may impede successful spawning and increase competition with other species. As with the other Colorado River Basin endangered fishes, predation by introduced species is also likely to have been an important factor in the decline of the species. Species such as bass, sunfish, catfish, red shiner, and the redside shiner prey on the eggs and young of a number of native fish species (45 FR 27710).

Other threats include hybridization with G. elegans (bonytail) and G. robusta (roundtail chub), introduced parasites, and effects of a small population size. In addition to possible genetic effects and higher vulnerability to catastrophic events, small population size in fish can contribute to low reproductive success during spawning. Increased hybridization among the native Gila species is thought to be symptomatic of changes in habitat and movement patterns leading to the genetic introgression (UNHP 2003). The introduced Asian tapeworm also may be a serious threat to the survival of the humpback chub.

Occurrence in the Project Area

The humpback chub is endemic to the Colorado River basin and is primarily found in Utah. In the Project area, there are four known populations of humpback chub: Black Rocks, Westwater, Yampa, and Desolation/Gray Canyons. Some individuals have also been seen in the Green River through Dinosaur National Monument. Designated critical habitat for the species, in the Project area, includes portions of the Colorado, Green, and Yampa rivers. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect humpback chub or its habitat.

June Sucker (*Chasmitstes liorus*) – FWS: Endangered; State: Utah

Regulatory Status

The June sucker was proposed for listing as endangered under the ESA in 1984, with critical habitat proposed in the Lower Provo and Spanish Fork rivers (49 FR 27183-27188). The listing was finalized in 1986, although the Spanish Fork River was removed from the final critical habitat designation (51 FR 10851-10857).

Taxonomy and Life History

The June sucker is one of four or five species in the genus *Chasmistes*, although one is presumed extinct (FishBase 2014). Two of the five species are endemic to Utah Lake and its tributaries, and form a species complex where anatomical similarity and apparent hybridization events have made identification difficult since each species was described. The Webug sucker (*C. fecundus*) has been variously separated from or combined with other species in descriptions on the basis of anatomical features that often overlap, and the current status of the species is unclear although it may persist in Utah Lake (Cook 2001). The closely related Utah sucker (*Catostomus ardens*) and June sucker may have hybridized during a drought event in the 1930s that reduced water levels in Utah Lake and affected spawning behavior. This event may have resulted in the loss of a pure June sucker population, although the resulting population, sometimes named *Chasmistes liorus mictus*, appears to be reproductively isolated and distinct from the Utah sucker at this time.

June suckers spawn in gravel beds in low-velocity rivers and streams that flow into Utah Lake. Spawning peaks in early June, after flows peak from snowmelt runoff (Modde and Muirhead 1994), although spawning may be shifting to earlier dates in response to changed flow patterns in managed rivers

(Andersen et al. 2006). After hatching in riverine gravel beds, larval June suckers may remain in low-flow areas, then drift downstream and enter Utah Lake. There, juveniles would take refuge and mature in extensive areas of emergent aquatic vegetation that formerly surrounded the lake. June suckers mature between 5 and 10 years of age, and individuals as old as 42 have been captured (Belk 1998).

Distribution and Habitat Requirements

The June sucker is restricted to Utah Lake and the Provo River, although it may occasionally spawn in other historically occupied tributaries of Utah Lake as well, including the Spanish Fork and Hobble Creek (FWS 1999a, Abate 2015). Several populations are maintained in fish hatcheries, and several populations exist in natural and man-made lakes and reservoirs, where the species was introduced to provide insurance against events that could affect the native population in Utah Lake (Andersen et al. 2006). The agency-preferred route crosses into the Utah lake watershed and the Spanish Fork River subbasin of the Jordan River basin.

Adult June suckers require open-water lake habitat, and feed primarily on zooplankton. June suckers have been observed feeding in large schools in open water, presumably following concentrations of zooplankton as well as potentially lowering individual predation risk (Billman 2008). Juveniles prefer the structure and shelter of emergent aquatic vegetation in shallow water, such as existed previously in marshes where spawning streams join Utah Lake.

Primary Threats to Survival

Many of the threats to the June sucker interact and are related to the physical and biological characteristics of Utah Lake. Manipulation of water levels in Utah Lake, together with the introduction of non-native herbivorous fish such as common carp (*Cyprinus carpio*) resulted in the loss of much of the emergent vegetation around the lake. Increased nutrient loading from land use practices such as agriculture adjacent to the lake and its tributaries supports extensive algal blooms. These blooms, together with higher turbidity resulting from the loss of emergent vegetation that previously buffered wave action and sediment-disturbing foraging activities of common carp, has allowed turbidity to increase and further reduced the ability of emergent vegetation to recover. The loss of shelter and foraging habitat for juvenile June suckers allowed high rates of predation from introduced game fish, and functionally prevented recruitment in the species prior to implementation of the hatchery program.

Alteration of flows in rivers used for spawning may have, as noted previously, shifted the spawning season earlier in the year. A change in spawning season can expose larval and juvenile June suckers to river and lake conditions to which they may not be adapted. Physical manipulation (e.g., damming, channelization) of many of the former spawning streams has eliminated natural spawning runs, with only the Provo River now supporting natural reproduction for the species.

Occurrence in the Project Area

The June sucker is found in Utah Lake in the Jordan River basin and historically spawned in several rivers that flow into the lake, including the Spanish Fork and Provo River. However, natural spawning is currently restricted to a small portion of the Provo River, lower Spanish Fork, and occasionally other tributaries of Utah Lake (Andersen et al. 2006, Abate 2015). The lower 3 miles of the Provo River is designated critical habitat (51 FR 10851-10857). The species may spawn in the lower reaches of Spanish Fork below a diversion structure that prevents upstream movement (Abate 2015). No designated critical habitat is present in or downstream from the Project area.

Least Tern (Interior Population; *Sternula antillarum*) – FWS: Endangered; State: Colorado

Regulatory Status

The least tern was proposed for listing under the ESA in 1984 (49 FR 2485-2488), and was listed as endangered on May 28, 1985 (50 FR 21784-21792). A 5-year review of the status of the least tern was initiated in March of 2008 (73 FR 21643), and the completed 5-year review was released in 2013 (FWS 2013b).

Taxonomy and Life History

Subspecies of the least tern in North America were recognized as a result of studies on vocalization and behavior differences in the Old and New Worlds (AOU 1998). The interior least tern (*Sterna antillarum athalassos*), the eastern or coastal least tern (*Sterna antillarum antillarum*), and the California least tern (*Sterna antillarum browni*) were originally distinguished. Given reports of no consistent morphological, behavioral, or vocal difference between the California and the coastal least terns, and lack of morphometric or biochemical distinctions of the different subspecies, the FWS did not list the subspecies but instead designated those least terns occurring in interior North America as endangered (FWS 1990c).

The least tern is the smallest of the North American terns. In breeding seasons the adult plumage includes a black cap and loral stripe contrasting with a white forehead. The least tern is often most distinguishable from other terns in basic and subadult plumages by small size. Nest selection by the least tern is generally dependent on open areas free of vegetation, above high water levels and safe from ground predators. Islands often are preferred where they occur. Sandy areas with sparse vegetation, mudflats, graveled rooftops and parking lots, and dredged-material deposits also are used for nesting sites. Breeding time periods vary geographically. Early April on the Gulf Coast, later April in California, early May on the north Atlantic coast, and late April to late May are all feasible breeding times in the interior population. Typically clutches are two or three, sometimes one; three-egg clutches are more prevalent at interior breeding areas than coastal areas, with an incubation period generally between 19 and 25 days (Thompson et al. 1997).

The least tern primarily feeds on fish and aquatic invertebrates that occur in the upper portion of the water column. The species appears to select for fish, especially if non-deep-bodied fish are available. The least tern forages throughout the day searching for prey while flying or hovering above the water, quickly plunging to the surface, but not fully submerging when grasping aquatic prey. Occasionally, the species captures flying insects over land and water, or skims the water’s surface to capture swimming insects (Wilson et al. 1993).

Distribution and Habitat Requirements

The least tern is a widely distributed breeder in North America. The species typically nests in open sandy beaches, sandbars, unvegetated islands, and a variety of material deposits along the coasts of oceans, bays, inland rivers, large lakes and reservoirs as well as Great Plains wetlands. In the coastal United States, the least tern breeds locally from southern Maine south to southern Florida, and along both shores of the Chesapeake Bay north to Baltimore and Queen Anne’s, Maryland; as well as along the extreme southern Delaware Bay. The least tern also breeds locally along the Gulf Coast from southern Florida west to southern Texas and along the Pacific Coast from the San Francisco Bay south to the Mexican border.

Within the inland United States, the least tern breeds locally from Missouri, Ohio and Mississippi rivers west throughout the Great Plains to eastern Montana, eastern Colorado, and eastern New Mexico. The species also breeds in Colorado’s Adobe Creek and Nee Noshe Reservoirs, Kiowa County, and Horse Creek Reservoir, Otero County. In S. Dakota: along Cheyenne River in Meade County, and in Nebraska: Platte River throughout from Lincoln County eastward, on Lake McConaughy of North Platte River, Loup River from Nance County to confluence with Platte, Elkhorn River throughout, and Niobrara River in Keyapaha. The least tern is also found in localized areas in the states: Nebraska, Kansas, Oklahoma, Texas, Arkansas, New Mexico, Louisiana, South Carolina, and Florida.

In Middle America, the least tern breeds in Mexico at coastal sites along Baja, the Pacific Coast from Sonora south to at least Oaxaca, along the Atlantic Coast in northern Tamaulipas, and along the northern and eastern coast of the Yucatan Peninsula. They also breed in Belize and western Honduras (Thompson et al. 1997).

The least tern usually forms colonies on bare or sparsely vegetated sand or dried mudflats along coasts or rivers, and sandy islands as well as gravel and sand pits (Smith and Renken 1991). Colonies are typically near lagoons, estuaries, rivers, or coasts. Often nests are found on deposited dredged materials (Burger and Gochfeld 1990).

Least tern colony habitats can be ephemeral, which makes continued use difficult, but the species shows high colony site tenacity and fidelity that are both influenced by changes in vegetative cover, predators, human activity, flood, and colony size (Atwood and Massey 1988). The presence and number of suitable nest sites as well as human activity limit colony sites.

Primary Threats to Survival

Human activity causing least tern habitat alteration and destruction via channelization, irrigation, and the construction of reservoirs and pools have contributed to the elimination of much of this tern’s sandbar and nesting habitat in the Missouri, Arkansas, and Red River systems (FWS 1990c). Most sandbars of the Missouri River have disappeared between Sioux City, Iowa, and Saint Louis. Habitat with sandbars often experience dam discharges, causing problems for the least terns nesting in remaining habitats. Before human regulation of river flows, summer flow patterns were more predictable with peak flows occurring in March and again in May and June with mountain snowmelt, allowing for flow decline during the rest of the summer and exposing sandbars during least tern nesting periods. Present hydropower, irrigation, and public recreation demands on river flow can conflict with historic flood regimes, often decreasing the quality and quantity of least tern nesting sites (FWS 1990c).

Occurrence in the Project Area

No least tern occurrences have been noted in or near the Project area based on Heritage data provided. According to FWS, the least tern does not occur west of Routt National Forest; however, the endangered interior populations may be affected by potential Platte River water use by the Project in Wyoming.

Mexican Spotted Owl (*Strix occidentalis lucida*) – FWS: Threatened; State: Colorado, Utah

Regulatory Status

The Mexican spotted owl was federally listed as a threatened species on March 16, 1993 (58 FR 14248). Critical habitat was originally designated on March 16, 1993 (58 FR 14248), and subsequently revoked on March 25, 1998 (63 FR 14378). Critical habitat was re-established on February 1, 2001 (66 FR 8530) and a comment period on critical habitat was re-opened on November 18, 2003 (68 FR 65020). The current defined critical habitat was established on August 31, 2004 (69 FR 53181). This apparent vacillation in designation of critical habitat is the result of conflict between environmental and economic interests in late seral stage coniferous forests inhabited by the bulk of northern spotted owls (*Strix occidentalis caurina*) in the Pacific Northwest. This conflict has resulted in several management plans and several FWS status reviews for the species (Gutierrez et al. 1995).

A revised recovery plan for the Mexican spotted owl was published in 2012. The recovery objective of the plan is to delist the species, which can occur when the population in the three most populated Recovery Units are stable or increasing, habitat monitoring protocols are designed and implemented, and a long-term management plan is in place to ensure appropriate management (FWS 2012d).

Taxonomy and Life History

The Mexican spotted owl is one of three recognized subspecies of the spotted owl in North America. *S. o. lucida* is the only subspecies that occurs in the Project study area. The other subspecies (*S. o. occidentalis* and *S. o. caurina*), the California spotted owl and the northern spotted owl, respectively, are found along the west coast from south-central California north to southwestern British Columbia (Gutierrez et al. 1995).

Spotted owls are usually found in steep canyons with mature or old-growth forest, but they also may be found in canyons with steep cliffs and relatively little forest habitat. They usually occur in habitats that support a multi-leveled canopy with a perennial water source nearby. They have been reported at elevations ranging from 3,700 feet to the subalpine transition (Ganey 1998; Gutierrez et al. 1995; Johnsgard 1988).

Spotted owls are nocturnal ambush hunters that feed mainly on small mammals, primarily rodent species, with wood rats (*Neotoma* spp.) often the dominant dietary component. Invertebrates make up a small portion of their prey, and they may supplement their diet with birds, bats, or lagomorphs (Ehrlich et al. 1988; Ganey 1998; Gutierrez et al. 1995). In Arizona, Mexican spotted owls feed on wood rats, white-footed mice (*Peromyscus leucopus*), voles (*Microtus* spp.), rabbits, and pocket gophers (*Thomomys* spp.) (Ganey 1998).

Spotted owls may construct nests in tree cavities (usually in live trees) or on constructed platforms on tree limbs. In Utah they nest almost exclusively in caves (Gorell et al. 2005). They may use abandoned raptor or corvid platform nests (Ehrlich et al. 1988; Terres 1980). They produce from 2 to 4 eggs, with the typical number being two (Ehrlich et al. 1988; Gutierrez et al. 1995; Terres 1980).

Distribution and Habitat Requirements

The Mexican spotted owl is a permanent resident in the interior mountain ranges of western North America, from southern Utah and central Colorado south through the mountains of Arizona, New Mexico, and extreme west Texas. Its range in Mexico includes mountainous regions from Sonora, Chihuahua, Coahuila, and Nuevo Leon south to Jalisco, Michoacan, and Guanajuato (AOU 1998).

The Mexican spotted owl normally occupies old-growth forest in mixed conifer, pine-oak woodland, deciduous riparian, or a combination of these habitats that will support a home range of 1,400 to 4,500 acres (Ehrlich et al. 1988; Gutierrez et al. 1995). An unaltered core area of approximately 600 acres centered on the nest site is the currently recommended disturbance buffer (Gutierrez et al. 1995). Habitat typically also has a structured canopy, a perennial water source, and a rodent dominated prey base of adequate size (Gutierrez et al. 1995).

Primary Threats to Survival

The primary threat to Mexican spotted owls in the U.S. is the risk of stand-replacing wildfire (FWS 2012d). Fire can create patches of preferred foraging habitat for Mexican spotted owls, but stand replacing fires can remove nesting habitat over large areas (Bond et al. 2002; Jenness 2000). However, fire is not a landscape-scale threat to Mexican spotted owl habitat on the Colorado Plateau, as the cliff and canyon habitat experiences a very low incidence and extent of stand-replacing fire (FWS 2012d).

At the time of listing, habitat loss and fragmentation related to old-growth timber harvest and other forest management practices (Ehrlich et al. 1988; Gutierrez et al. 1995) were considered the primary threat to Mexican spotted owl survival, but current forest-management practices are more compatible with maintenance of spotted owl habitat conditions (FWS 2012d). Secondary human-caused habitat impacts include losses associated with developments for urban or suburban expansion, and development for agriculture, reservoirs, mining, and fuel-wood harvesting (Gutierrez et al. 1995).

Occurrence in the Project Area

There are several areas where the spotted owl could occur in the Project area in Utah: the northeast corner of Uintah County south of and including the Green River and its tributary canyons and the Desolation Canyon area of the Green River on the boundary between Carbon and Uintah counties (Gorell et al. 2005; Utah Department of Natural Resources 2008). The Mexican spotted owl is not believed to occur in Colorado or Wyoming. The Project does not cross designated critical habitat for the species.

Pallid Sturgeon (*Scaphirhynchus albus*) – FWS: Endangered

Regulatory Status

The pallid sturgeon was originally submitted as a category 2 candidate species on December 30, 1982 (47 FR 58454-58460). The species was listed as endangered on September 6, 1990 (55 FR 36641-36647). On November 7, 1993, a recovery plan for the pallid sturgeon was published. The objective of this plan is to delist the species by 2040. Delisting may be considered when a population structure with at least 10 percent sexually mature females in each recovery-priority management area and there are sufficient population numbers in the wild to maintain stability. Specific numbers quantifying sufficient population numbers has yet to be determined (Dryer and Sandvol 1993; FWS 2007c). No critical habitat has been designated for the pallid sturgeon.

Taxonomy and Life History

The pallid sturgeon is a member of an ancient group of bony fishes (subclass *Paleopterygii*) that thrived from the Paleozoic Era through to the early Mesozoic Era. Most species in this subclass went extinct, but eight species of sturgeon (family *Acipenseridae*) and the paddlefish (family *Polyodnotidae*) continue to inhabit portions of North America (Dryer and Sandvol 1993).

The pallid sturgeon was described in 1905 from nine specimens collected out of the Mississippi River near Grafton, Illinois. It was originally classified as its own genus (*Paracaphirhynchus*), but was ultimately determined to be part of the genus *Scaphirhynchus* in 1954 (Dryer and Sandvol 1993).

The pallid sturgeon is long and slender with a completely armored caudal peduncle. It has a flattened, shovel-shaped snout with a toothless mouth located on the ventral side of the snout. The species is the largest fish species found in the Missouri/Mississippi River drainage with some individuals near 86 pounds. Individuals found in the northern portions of the species' ranges tend to be significantly larger than those in the southern portions of the range (Dryer and Sandvol 1993).

Spawning occurs between June and August. It is unclear at what size and age sexual maturity is reached, but for most sturgeon species, sexual maturity is not reached until 7 years of age and several years for eggs to mature between spawnings is required. One study estimates that male pallid sturgeons reach sexual maturity at 7 to 9 years with 2- to 3- year intervals between spawning years. Females were estimated to reach sexual maturity at 15 to 20 years with 3- to 10-year intervals between spawning years (Dryer and Sandvol 1993).

Pallid sturgeons primarily consume fish, but will also consume aquatic invertebrates (Dryer and Sandvol 1993).

Distribution and Habitat Requirements

Pallid sturgeons inhabit the Missouri and Mississippi River systems from Montana to southern Louisiana in addition to tributaries of those rivers. The pallid sturgeon evolved with the rivers and relied on the annual floods that would occur as a result of snowmelt. These flood events would occur in April and June stimulating spawning migrations (Dryer and Sandvol 1993).

Specific habitat preference data is extremely limited due to the rarity of the species. Utilizing capture occurrences may or may not provide a true representation of the micro-habitat characteristics of the pallid sturgeon. Pallid sturgeons often are captured over a sand bottom which is the predominant bottom substrate within the species' range. The species has been captured over gravel and rock in the Yellowstone River. The species is most often captured in areas with a velocity of 1.3 to 2.9 feet per second or in slower currents near to shore (Dryer and Sandvol 1993).

Primary Threats to Survival

The primary threat to the survival of the pallid sturgeon is habitat loss. Destruction and alteration of the river system by humans through dams and channelization has greatly altered the water flow and ecosystems of these rivers. Channelization results in changes in water velocity, reduces the width of the river, and prevents water flow into backwaters. Dams have resulted in the control of annual flooding as well as fragmenting habitat. Impoundments have also reduced the sediment. Pallid sturgeons evolved to live in a nearly sightless world. Water clarity has increased predation by sight-feeding predators as well as making capture of prey by pallid sturgeons more difficult (Dryer and Sandvol 1993).

Occurrence in the Project Area

There are no occurrences of pallid sturgeon with or near the Project area. However, the species does inhabit the lower Platter River. The lower Platte River is considered to be the Platte River from the confluence with the Missouri River upstream to the Loup River (FWS 2007c). This area is entirely located in eastern Nebraska, but may be affected due to drawdown should the Project use water from the Platte River in Wyoming.

Piping Plover (*Charadrius melodus circumcinctus*) – FWS: Threatened; State: Colorado

Regulatory Status

All regulatory designations for piping plover have been at the species level. On December 30, 1982, the FWS designated the piping plover as a category 2 candidate for listing (47 FR 58458). On December 11, 1984, the Great Lakes breeding population was designated as endangered and all other piping plovers were designated as threatened (50 FR 50726-50734). The Great Lakes breeding population includes the states of Illinois, Indiana, Mississippi, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, and the province of Ontario.

Critical habitat for the Great Lakes breeding population was designated on May 7, 2001 (66 FR 22938-22969). Critical habitat for wintering piping plovers was designated on July 10, 2001 (66 FR 36038-36143). Critical was designated for the Northern Great Plains breeding population on September 11, 2002 (67 FR 57638-57717).

Recovery plans have been developed for each of three separate breeding populations: Atlantic Coast, Great Lakes, and Northern Great Plains. These plans call for recovery criteria specific to each population

(FWS 2009b). Recovery criteria for the Northern Great Plains populations include: (1) increase the number of birds to 1,300 pairs; (2) protect essential breeding and winter habitat; (3) attain the Canadian Recovery objective of 2,500 birds for the prairie region; and (4) the 1,300 pairs will be maintained in the following distribution for 15 years (FWS 1988a):

- Montana: 60 pairs
- North Dakota: 650 pairs (Missouri River, 100 pairs; Missouri Coteau, 550 pairs)
- South Dakota: 350 pairs (Missouri River below Gavins Point, 250 pairs [shared with Nebraska]; other Missouri River sites, 75 pairs; other sites, 25 pairs)
- Nebraska: 465 pairs (Platte River, 140 pairs; Niobrara River, 50 pairs; Missouri River, 250 pairs; Loup River system, 25 pairs)
- Minnesota: 25 pairs (Lake of the Woods)

Taxonomy and Life History

Two subspecies of piping plover (*Charadrius melodus circumcinctus and C.m. melodus*) have been recognized since 1957. The subspecies *melodus* is considered the Atlantic coast subspecies and *circumcinctus* is the inland subspecies. There has been debate over the recognition of these subspecies; however, recent genetic analysis has come to suggest that subspecific differentiation is valid and that Great Lakes birds align more closely with the inland birds than the Atlantic birds (Elliott-Smith and Haig 2005; FWS 2009b). Even though the Great Lakes and Northern Great Plains populations are a single subspecies, behavioral and ecological factors provide enough separation to continue managing these two populations separately (FWS 2009b).

Piping plovers are small shorebirds with a brown dorsal side and white underbelly. They have a ring around their neck that may be complete or incomplete. Plovers have stubby bills with an orange base and black tip (Elliott-Smith and Haig 2005).

Piping plovers tend to lay four eggs per clutch and have one brood per year. Females may lay multiple clutches if nests are destroyed, but will only raise a single brood. Nests are dug in sandy substrate. In the northern reaches of the breeding range, the species will begin laying eggs during the first 2 weeks of May and incubate for 25-28 days. Chicks fledge between 21 and 35 days of age (Elliott-Smith and Haig 2005).

Piping plovers forage along freshwater and marine shorelines. They feed on freshwater, marine, terrestrial, and benthic invertebrates (Elliott-Smith and Haig 2005).

Distribution and Habitat Requirements

As previously mentioned, there are three breeding populations. The Atlantic Coast population inhabits the Atlantic Coast between Newfoundland and North Carolina. The northern Great Plains breeding populations ranges from northern Saskatchewan and south to portions of Kansas and Oklahoma and from Montana east to Minnesota. The Great Lakes population was found throughout much of north-central United States and south-central Canada, but is currently limited to northern Michigan and northern Wisconsin. Piping plovers winter along the Atlantic and Gulf Coasts from North Carolina to Mexico and portions of the West Indies and Bahamas (66 FR 22939).

Breeding habitat consists of open sandy beaches. These beaches may be found on shorelines of oceans or Great Lakes, but also may be found along alkali lakes, reservoirs, rivers, freshwater lakes, dry alkali lakes, sandpits, industrial ponds, and gravel mines. The species tends to prefer wide, sparsely vegetated sand or gravel beaches adjacent to vast waters. Along rivers, piping plovers will use beaches, sand flats, dredge islands, and drained floodplains where vegetative cover is less than 20 percent. Winter habitat is similar to breeding habitat, but is almost entirely located along oceanic coasts and bays (Elliott-Smith and Haig 2005).

Primary Threats to Survival

The primary threat to piping plovers is loss of habitat. Shoreline development along the Gulf and Atlantic Coasts and along the Great Lakes has greatly reduced the amount of available habitat. Additional efforts to stabilize beaches in the wake of large storms have altered the natural tidal flows in many areas. In the northern Great Plains population area, development of reservoirs, channelization of rivers, and modification of river flows have greatly altered the vegetation growth in areas that were previously scoured of vegetation by spring flooding events (FWS 2009b)

In addition to these threats, other human-related impacts are threatening the survival of piping plovers. Recreation along coasts and shorelines disturb roosting and/or nesting plovers. Pets often destroy nests. Wind and oil development throughout much of the species' range may further affect survival (FWS 2009b)

Occurrence in the Project Area

There are no piping plovers or habitat in the Project area. However, the species is known to inhabit the Platte River throughout Nebraska. There may be potential for impact on the species through project-related water use resulting in drawdown of water downstream in the Platte River.

Razorback Sucker (*Xyrauchen texanus*) – FWS: Endangered; State: Colorado, Utah

Regulatory Status

The razorback sucker was first proposed for listing as a threatened species under the ESA of 1973 on April 24, 1978 (43 FR 17375). On May 27, 1980, the FWS withdrew the proposal, because it was not finalized within the 2-year time limit from the initial publication in the *Federal Register* (45 FR 35410). In 1989, the FWS received a petition from the Sierra Club, National Audubon Society, The Wilderness Society, Colorado Environmental Coalition, Southern Utah Wilderness Alliance, and the Northwest Rivers Alliance requesting that the razorback sucker be listed as an endangered species. A positive finding was made and subsequently published by the FWS on October 23, 1991 (56 FR 54957). On March 21, 1994 the FWS designated 15 reaches of the Colorado River system, including portions of the Green, Yampa, Duchesne, Colorado, White, Gunnison, and San Juan rivers in the Upper Basin and portions of the Colorado, Gila, Salt, and Verde rivers in the Lower Basin, totaling 1,724 miles of critical habitat for the species (59 FR 13374). On February 14, 2007, the FWS and Nevada Department of Wildlife entered into a Safe Harbor Agreement, encouraging the conservation, enhancement of survival, and recovery of the species through development of facilities for the rearing of juveniles and providing refuge habitats for adult razorback suckers (71 FR 57558). A 5-year review was initiated on April 18, 2007 (72 FR 19549).

The current recovery plan for the razorback sucker was published in 1998 and amended in 2002. To address unique threats and site-specific management actions, the entire population of the razorback sucker has been reduced to upper and lower basin recovery units. The upper basin recovery subunit is composed of the Green River, upper Colorado River, and San Juan River subbasins and the lower basin recovery subunit includes the mainstem and tributaries of the Colorado River from Lake Mead downstream to the southerly International Boundary with Mexico. The species may be downlisted from endangered to threatened, if during a 5-year period: (1) two subbasins (one Green River subbasin and one in either the Colorado River or San Juan River subbasins) and two subunits (lower basin recovery subunit) demonstrate that genetically and demographically viable, self-sustaining populations of more than 5,800 adults are maintained; (2) a genetic refuge is maintained in a suitable location in the lower basin recovery unit such as Lake Mohave; and (3) site-specific management tasks to minimize or remove threats have been identified, developed and implemented. Delisting can occur if the three goals listed above are maintained for an additional 3 years past downlisting and a necessary level of protection is attained (FWS 2002b).

Taxonomy and Life History

The razorback sucker, also known as the humpback sucker, is a member of the family *Catostomidae*. The razorback sucker was first described by Charles Conrad Abbott as *Catostomus texanus* because it was mistakenly thought that the species had come from the Colorado River in Texas. In 1889 it was reorganized into the *Xyrauchen* genus, which translates to razornape. LaRivers redescribed the species, correctly identifying the place of origin to the Colorado and New rivers in Arizona (FWS 2002b).

Adult razorback suckers can grow up to 3 feet long and weigh up to 13 pounds. However, most specimens are smaller. The largest razorback suckers currently inhabit the warmer climates of the lower Colorado River. It is easily distinguished from other catostomids by a pronounced bony keel that grows from the dorsal surface of its back and gill rakers, an adaptation for feeding on zooplankton. Razorback suckers consume insects, zooplankton, phytoplankton, algae, and detritus, depending on age and habitat. Larvae begin feeding on plankton, as the mouth migrates to a sub-terminal position, larvae begin feeding on benthos as well (FWS 2002b).

Razorback suckers spawn as early as 3 to 4 years of age. Depending on water temperature, spawning may begin in mid-April and last as late as June. In Lake Mohave, spawning has been observed as early as November, but no earlier than February in Lake Mead. They migrate long distances, congregating in large numbers at spawning sites. Razorback suckers are broadcast spawners that deposit adhesive eggs over a cobble substrate that are quickly covered by silt. Adults do not guard nests (FWS 2002b).

Distribution and Habitat Requirements

Historically, the razorback sucker was widely distributed and abundant in the Colorado River and major tributaries from Northern Mexico through Arizona and Utah into Wyoming, Colorado, and New Mexico. Now it is much reduced in range and abundance. In the Lower Colorado Basin numbers of razorback sucker began to decline with the impoundment of Lake Mead.

In the Upper Colorado River Basin, razorback suckers are considered extant in 4 locations: Westwater and Cataract Canyons and the Utah-Colorado border on the Colorado River, Desolation/Gray Canyons of the Green River, and a population in northeastern Colorado on the Yampa River. The razorback sucker is more widely distributed in the Lower Basin. The total population is estimated at approximately 10,500 individuals in three areas. The Lake Mohave population is the largest, estimated at 9,000 individuals. There is no observed recruitment in the population though, so as the population ages it becomes smaller. In Lake Mead, the population is estimated at about 400 individuals with an average age of 20 to 25 years of age, indicating recent recruitment. Approximately 1,000 individuals are believed to inhabit a 60-mile reach between Davis Dam and Lake Havasu and have demonstrated reproduction (FWS 2002b).

Razorback sucker habitat includes slow areas, backwaters, and medium to large eddies of medium to large rivers and their impoundments. Three of the four remaining populations of more than 100 individuals are found in reservoirs. Flooded lowlands and lower portions of tributary streams serve as resting and feeding areas during breeding season in the Green River basin. The razorback sucker is commonly associated with sandy, muddy, and rocky substrates in areas with little aquatic vegetation. In Lake Mohave, individuals were associated with inshore habitats except during the hotter months when they moved offshore possibly to avoid warmer water temperatures (FWS 2002b).

In streams, spawning occurs most commonly near shores in streams over silty sand, gravel, or rock substrate. In reservoirs, spawning occurs on gravel bars swept clean by wave action or along shorelines over mixed substrates. Larvae appear to remain in gravel until swim-up in the shallow littoral zone for a few weeks after hatching, and then disperse to deeper waters. Seasonally inundated floodplains provide favorable feeding areas for young (FWS 2002b).

Primary Threats to Survival

Primary threats to the razorback sucker are nonnative fishes and invertebrates and human alteration of riparian habitat. Predation on larvae and juveniles by introduced fishes results in low and sometimes absent recruitment despite confirmed spawning and hatched larvae. Competition with and predation by exotic crayfish may have also been documented in some areas. Hybridization with other suckers is a potential problem in some locations. The loss, fragmentation, and modification of habitat due to construction and operation of dams greatly restrict the amount of suitable habitat. Dams lead to impoundment of streams causing changes in winter and spring flows, altered river temperatures, and reduced flooding (FWS 2002b).

Occurrence in the Project Area

The razorback sucker is endemic to the Colorado River Basin, found primarily in Utah. In the Project area, the razorback sucker is found in Westwater and Cataract Canyons on the Colorado River in Grand, San Juan, and Wayne counties, Desolation/Gray Canyons on the Green River in Carbon, Emery, and Grand counties, and in the Yampa River in Moffat County, Colorado. Portions of the designated critical habitat are also in the Project area in the Green, Yampa, Duchesne, Colorado, White, and Gunnison rivers. Water depletions in the upper Colorado River system in Wyoming, Colorado, and Utah could affect razorback sucker or its habitat.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) – FWS: Endangered; State: Colorado, Utah

Regulatory Status

The southwestern willow flycatcher was listed as endangered on February 27, 1995, primarily because of loss and modification of riparian habitats (60 FR 10695-10715). Critical habitat was later designated on July 22, 1997 (62 FR 39129). A court decision in 2001 resulted in a subsequent final rule on critical habitat on October 19, 2005 (70 FR 60885). It includes a portion of the Virgin River in Washington County, Utah, and Clark County, Nevada. A 5-year review of the species was completed by the FWS in 2005 (73 FR 14995).

A recovery plan for the southwestern willow flycatcher was published in 2002. Reclassification status includes increasing the total population to 1,950 geographically distributed territories, which must be maintained for 5 years before delisting can occur (FWS 2002e).

Taxonomy and Life History

The southwestern willow flycatcher was originally described by John James Audubon in 1828 as Traill's Flycatcher (*Muscicapa traillii*), from specimens obtained in wooded areas along the Arkansas River (Sedgwick 2000). Phillips (1948) described *E. t. extimus*, the southwestern willow flycatcher, from specimens collected on the San Pedro River in southeastern Arizona. Depending on the author, there are four or five recognized subspecies of the willow flycatcher; *E. t. traillii*, *E. t. adastus*, *E. t. brewsteri*, *E. t. extimus*, and *E. t. campestris (the outlier)* (Sedgwick 2000).

Southwestern willow flycatchers normally select nest sites in thickets of shrubs and trees between 4 and 23 feet (4 and 7 meters) in height, with dense foliage between ground level and 13 feet (4 meters) (60 FR 10695-10715; Ehrlich et al. 1988). The nest is an open, compact cup of plant bark, fiber, and grass and lined with a thin layer of fine grass and cottony and silky plant materials. There are frequently feathers in the rim, and the nest may have plant material dangling from the bottom (Harrison 1979). Nest trees often are rooted in or near water. Plant species diversity in nest territories varies. The southwestern willow flycatcher will nest in native riparian species where available, but it will also nest in monocultures of salt cedar (*Tamarix* sp.) or Russian olive (*Elaeagnus angustifolia*) (USGS 2008). Nest sites are commonly reported in Geyer willow (*Salix geyeriana*), Goodding willow (*S. gooddingii*), box elder (*Acer negundo*), and live oak (*Quercus agrifolia*) (Sogge et al. 1997). Southwestern willow flycatchers usually spend only 3 to 4 months on their breeding grounds, spending the rest of the year in migration or at wintering grounds (FWS 2002e). Females lay a clutch of 3 to 4 eggs (FWS 2002e). Nestlings fledge after 12 to 15 days (Ehrlich et al. 1988; FWS 2002e).

Like most other flycatchers, the willow flycatcher forages primarily by flying from a perch to capture flying insects (Ehrlich et al. 1988). It also will use gleaning techniques when foraging for spiders, millipedes, and other flightless arthropods, and also when feeding on berries (Sedgwick 2000; Terres 1980). Food preferences of the willow flycatcher are reported by Bent (1942), in documentation associated with the Alder flycatcher. These were considered a single species at the time the data were collected, and the sample set included both species. In the sampled diets, animal material made up 96 percent, and vegetative material was only 4 percent of the food. The vegetative part of the diet included elderberries (*Sambucus* spp.), blackberries or raspberries (*Rubus* spp.), dogwood berries (*Cornus* spp.), juniper berries (*Juniperus* spp.), and unidentified fruits and seeds.

Distribution and Habitat Requirements

All subspecies of the willow flycatcher winter in Central America, from southwestern Mexico (Nayarit and Oaxaca) south to Panama and possibly northwestern Columbia (AOU 1998), but migration routes are relatively unknown (FWS 2002e) and are believed to pass through primarily the southern and southwestern parts of the United States, with the northern subspecies passing through the breeding areas of the southwestern willow flycatcher (AOU 1998; Sogge et al. 1997). The normal spring migration period is from early May through early June, and the fall migration may extend from late July through September (Phillips et al. 1964). Historic breeding records exist for southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and northwestern Mexico (FWS 2002e). In the western United States, southwestern willow flycatchers often are found on willow-covered islands, brush along watercourses, beaver meadows, and mountain parks, always in close association with riparian waters and lentic waters (FWS 2002e). They may be found as high as 7,875 feet, and they also follow willow- or cottonwood-lined streams out into desert regions (Terres 1980). Southwestern willow flycatcher territories and nest sites are usually located near open water, cienegas, marshy seeps, or saturated soils (Sogge et al. 1997). In the semiarid and arid parts of the southwest, hydrologic conditions can vary radically both within a season and between years. Many sites have surface water or saturated soil only during the early part of the breeding season. Breeding habitat on the edge of a reservoir may have standing water during a wet year, or it may be further from surface water during dry conditions (Sogge et al. 1997).

Four specific habitat types have been described as breeding areas for the southwestern willow flycatcher (Sogge et al. 1997). The first of these types is monotypic high-elevation willow. This habitat is composed of dense stands of willows 10 to 23 feet (3 to 7 meters) in height with no distinct overstory. This community often is associated with sedges, rushes, or other herbaceous wetland plants. A second habitat type is monotypic exotic, with dense stands of salt cedar or Russian olive up to 33 feet (10 meters) in height. These species form a dense, closed canopy, with no distinct overstory layer (Sogge et al. 1997).

Native broadleaf-dominated communities form a third habitat type. This habitat may be composed of a single species, such as Goodding willow, but often contains other broadleaf tree and shrub species, including cottonwood (*Populus* spp.), other willows, boxelder ash (*Fraxinus* spp.), alder (*Alnus* spp.), and buttonbush (*Cephalanthus occidentalis*). The vegetation in this habitat type ranges in height from 10 to 49 feet (3 to 15 meters). There are trees of various size classes, and there is often a distinct overstory. The final habitat type is a mixture of native and exotic species, including those listed above. In any particular area, the native and exotic species may be dispersed as patches dominated by natives or exotics, or they may be more evenly distributed throughout the area (Sogge et al. 1997).

Regardless of the species composition, all of these habitats share common structural characteristics. Occupied habitats always have dense vegetation in the patch interior, and dense patches often are interspersed with small clearings, open water, or areas of sparse shrubs. Habitat patches can vary in size and shape, with some occupied areas being relatively dense, linear, contiguous stands, and others being large, irregularly shaped mosaics of dense vegetation intermingled with open areas. Patch sizes can range from as little as 2 acres to several hundred to a thousand acres (XX hectares to several hundred hectares). Southwestern willow flycatchers have not been found nesting in narrow riparian habitats less than 33 feet (10 meters) wide (Sogge et al. 1997).

Migration and wintering habitat may differ from breeding habitat. During migration, riparian habitat along major southwestern drainages is commonly used, but a close association with water may not always exist. These areas might be considered stopover areas and may be very important resources for the southwestern willow flycatcher (FWS 2002e).

Primary Threats to Survival

Two primary factors have been identified as serious threats to the continued existence of the southwestern willow flycatcher (60 FR 10695-10715). These threats are the loss and degradation of riparian habitat and brood parasitism by brown-headed cowbirds (*Molothrus ater*). The primary causes for riparian alteration and degradation include urban and agricultural development, water diversion and impoundment, channelization, livestock grazing, off-road vehicles and other recreational use, and hydrological changes resulting from these uses (Jones and Cahlan 1975) (60 FR 10695-10715).

The FWS believes that the invasion of salt cedar is a factor in the loss and modification of habitat for the southwestern willow flycatcher (60 FR 10695-10715). Many other human activities, including livestock grazing, water diversion, channelization, and vegetation removal, in the riparian area tend to favor the spread of salt cedar. The spread of salt cedar coincides with the decline of the southwestern willow flycatcher, although the flycatchers have been documented to breed in dense salt cedar stands (60 FR 10695-10715).

Brown-headed cowbirds also are a threat to southwestern willow flycatchers because of their reproductive strategy of brood parasitism. The spread of cowbirds into the range of the southwestern willow flycatcher began in the late 1800s, with the increase in the human-population density and their associated livestock (60 FR 10695-10715). The willow flycatcher is a common host to cowbirds (Ehrlich et al. 1992; Sogge et al. 1997). The flycatchers appear to be nearly incapable of rearing their own young if a cowbird chick is in the nest, and parasitism almost always leads to a complete failure of the nest (Sogge et al. 1997).

Occurrence in the Project Area

Portions of the Project area in Utah are within the breeding range of the southwestern willow flycatcher (Sedgwick 2000). However, the Project area does not include any designated critical habitat for the species. Southwestern willow flycatchers may be present in riparian habitats in Grand and Emery counties, Utah.

Whooping Crane (*Grus americana*) – FWS: Endangered; State: Colorado

Regulatory Status

The whooping crane was listed as endangered on March 11, 1967, under the ESPA, and carried forward under the ESA on its passage in 1973 (32 FR 4001). Whooping crane populations consist of one wild population and several reintroduced NEPs. NEPs were designated in several regions: the Rocky Mountains population, the Florida nonmigratory population, the eastern United States migratory population, and the southwestern Louisiana nonmigratory population (66 FR 33903-33917, 62 FR 38932-38939, 58 FR 5647-5658). The reintroduced Rocky Mountains NEP migrated through the Project area, although the reintroduction was not successful and no whooping cranes remained after 2002 (Canadian Wildlife Service and FWS 2007). The Aransas-Wood Buffalo population, listed as endangered, is the only self-sustaining wild population, and uses the Platte River as an important migration stopover point. Critical habitat was designated in the United States in 1978 for key wintering and migration areas (43 FR 20938-20942).

The first recovery plan for the whooping crane was prepared in 1980, revised in 1986, 1994, and most recently in 2007 (Canadian Wildlife Service and FWS 2007). The recovery plan does not identify delisting goals but anticipates the whooping crane can be downlisted to threatened when a single self-sustaining population of at least 1,000 individuals is reached, or when multiple smaller self-sustaining populations have been maintained in the wild for at least 10 years. Additionally, a captive breeding population must maintain the current genetic diversity of the species.

Taxonomy and Life History

The whooping crane is a member of the family *Gruidae*, its closest relatives in continental North America being five races of sandhill cranes (*Grus canadensis*). The whooping crane is North America’s tallest bird, with males approaching 5 feet (1.5 meters) in height. The sexes appear the same, although their guard call vocalizations are sexually distinct. The plumage is snowy white, with black primaries, a carmine crown and malar region, and a dark wedge-shaped patch on the nape. Juvenile birds have reddish-cinnamon plumage until the end of their second summer.

Eggs are normally laid from late April to mid-May, and hatch a month later. Whooping cranes generally nest annually, unless nesting habitat conditions are unsuitable or the birds are nutritionally stressed. The diet varies seasonally and by habitat, but includes insects, frogs, rodents, fish, plant tubers, berries, crabs, crayfish, clams, and agricultural grains (Canadian Wildlife Service and FWS 2007).

Distribution and Habitat Requirements

Historically, whooping cranes ranged from the Arctic coast south the central Mexico, and from Utah east to New Jersey, South Carolina, Georgia, and Florida (Canadian Wildlife Service and FWS 2007). Currently, only three wild populations exist, with another nine in captivity at various facilities. As of February 2006, the total wild population consisted of 338 individuals, and the total captive population of 135 individuals (Canadian Wildlife Service and FWS 2007).

The Aransas-Wood Buffalo population nests in and around Wood Buffalo National Park in Alberta and the Northwest Territories, and winters in and adjacent to Aransas National Wildlife Refuge on the Texas coast. Departure from the wintering grounds generally begins between March 25 and April 15, with the autumn migration commencing around mid-September. Most birds will have arrived on the wintering grounds between late October and mid-November (Canadian Wildlife Service and FWS 2007).

Reintroduction attempts in the Rocky Mountains took place from 1975 to 1989 and again in 1997. One male from that population remains in captivity; the last remaining wild bird died in 2002 (Canadian

Wildlife Service and FWS 2007). A non-migratory flock was introduced in the Kissimmee Prairie and surrounding area in central Florida in 1993. Efforts have been ongoing since 2001 to establish a migratory flock between Wisconsin and the central Florida Gulf Coast.

Breeding habitat in Wood Buffalo National Park (Canada) consists of numerous shallow, poorly drained wetlands of varying sizes and shapes, separated by narrow, slightly elevated ridges with an overstory of white and black spruce (*Picea glauca*, and *P. mariana*), tamarack (*Larix laricina*), and willows (*Salix* spp.), with a shrub understory. Habitat on the wintering grounds includes tidal flats, estuarine marshes, and other shallow coastal wetland communities (Lewis 1995).

Primary Threats to Survival

A variety of factors threaten the survival of the whooping crane. As with many other endangered species, destruction of habitat, loss of migration stopover habitat, and displacement due to human activities are threats. Additionally, loss of individuals by human shooting remains a threat. In November 2009, a reproductive female whooping crane from the eastern United States migratory population was shot and killed in Indiana (FWS 2009c), and shooting deaths due to vandalism or misidentification continue (Canadian Wildlife Service and FWS 2007). An estimated 60 to 80 percent of crane losses occur during migration, with the primary cause of loss being collisions with utility lines. Additional threats are posed by disease, inclement weather, predation, and the species' delayed reproductive maturity, low reproductive rates, and drastically reduced gene pool (Canadian Wildlife Service and FWS 2007; Lewis 1995).

Occurrence in the Project Area

The Aransas-Wood Buffalo population of whooping cranes migrates across the Great Plains twice a year, between the Texas Gulf Coast and northern Alberta/southern Northwest territories in Canada. The vast majority of whooping crane sightings for this migration route fall within a narrow corridor crossing Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Saskatchewan, Alberta, and the Northwest territories (FWS 2009d; Stehn 2007). The introduced Rocky Mountain population included wintering grounds in eastern Idaho and western Wyoming, however no individuals of that population remain in the wild (Canadian Wildlife Service and FWS 2007); therefore, no whooping cranes would be expected to occur in the Project study area. Whooping crane and designated critical habitat along the Platte River could be affected by water use in the Platte River system.

Yellow-billed Cuckoo (*Coccyzus americanus*) – FWS: Threatened; BLM: Wyoming, Colorado, Utah; USFS: Ashley, Manti-La Sal, Uinta National Forests; State: Wyoming, Colorado, Utah

Regulatory Status

The western yellow-billed cuckoo was petitioned for ESA listing as a subspecies in 1998 (Center for Biological Diversity 1998). In 2001, the FWS determined that listing the yellow-billed cuckoo in the western United States as a DPS was warranted but was precluded by higher listing priorities (66 FR 38611-38626). FWS proposed listing the western United States DPS of the yellow-billed cuckoo as threatened under the ESA in 2013 (78 FR 61621-61666), and published a final rule listing the DPS in 2014 (79 FR 59992-60038). Following the proposed listing of the DPS, the FWS proposed critical habitat for the yellow-billed cuckoo in 2014 (79 FR 48547-48652). Critical habitat was proposed in nine states, including Wyoming, Colorado, and Utah. East of the Continental Divide (outside the listed DPS), the BLM recognizes the yellow-billed cuckoo as a BLM-sensitive species.

Taxonomy and Life History

The yellow-billed cuckoo is one of six species of the family *Cuculidae* that breed in the United States (National Geographic Society 2002). The yellow-billed cuckoo was first described by Linnaeus in 1758 as *Cuculus americanus*, with the western yellow-billed cuckoo being described in 1887 as *Coccyzus americanus occidentalis* by Ridgeway. However, since the late 1800s, debate has centered on whether the species should be split into eastern (*C. a. americanus*) and western (*C. a. occidentalis*) subspecies (66 FR 38611-38626). Those in favor or recognizing subspecies cited differences in morphology between eastern and western birds. Review and study of yellow-billed cuckoo taxonomy occurred in response to a petition in 1986 to list the yellow-billed cuckoo as endangered in California, Washington, Oregon, Idaho, and Nevada. In their response to a second petition the FWS determined that there was not enough evidence to consider the western population as a distinct subspecies, but the population did warrant listing as a DPS. The range of the western yellow-billed cuckoo was determined to be the area west of the west of the Rocky Mountains (66 FR 38611-38626).

Western populations of yellow-billed cuckoos breed in dense riparian woodlands, primarily of cottonwood (*Populus fremontii*), willow (*Salix* spp.), and mesquite (*Prosopis* spp.), along riparian corridors in otherwise arid areas (Hughes 1999). Dense undergrowth may be an important factor in selection of nest sites (Ehrlich et al. 1988). Western yellow-billed cuckoos appear to require relatively large tracts of riparian woodland. Several studies have reported western yellow-billed cuckoos nesting in tracts greater than 25 acres in size. These cuckoos may be restricted to areas close to water because of humidity requirements for hatching eggs and rearing chicks (Laymon 1998).

Most western yellow-billed cuckoos arrive on their breeding grounds in June (Laymon 1998). They construct an unkempt stick nest on a horizontal limb, often in shrubby vegetation (Ehrlich et al. 1988; Terres 1980). Nest heights range from 4.3 feet to (rarely) 98 feet and average below 20 feet (Laymon 1998).

Yellow-billed cuckoos lay one to five large eggs, which hatch after 9 to 11 days of incubation (Ehrlich et al. 1988). Nestlings fledge at 5 to 8 days of age, giving the species the shortest combined incubation and nestling period known for any bird (Corman and Wise-Gervais 2005; Hughes 1999). They are occasionally brood parasites of other species (Hughes 1999). This behavior may be stimulated by high egg production resulting from abundant food supplies (Ehrlich et al. 1988).

Yellow-billed cuckoos forage primarily by gleaning insects from vegetation, but they also may capture flying insects (Ehrlich et al. 1988; Hughes 1999; Laymon 1998). They specialize on relatively large prey, including caterpillars, katydids, cicadas, grasshoppers, and tree frogs (Laymon 1998; Terres 1980). Their breeding season may be timed to coincide with outbreaks of insect species, particularly tent caterpillars (Hughes 1999; Ehrlich et al. 1988; 66 FR 38611-38626). They also consume some wild berries; take small lizards and frogs, and occasionally bird eggs and young as prey (Hughes 1999; Terres 1980).

Distribution and Habitat Requirements

The western yellow-billed cuckoo was formerly widespread and locally common in California and Arizona; locally common in New Mexico, Oregon, and Washington; and local and uncommon along drainages in western Colorado, western Wyoming, Idaho, Nevada, and Utah (66 FR 38611-38626). Populations of yellow-billed cuckoos in the western United States have declined over the past century and their breeding range has contracted. The species may be extirpated from British Columbia, Washington, and Oregon (Hughes 1999).

The yellow-billed cuckoo breeds from interior California, southern Idaho, the Dakotas, and southern New Brunswick south to Baja California, southern Arizona, Chihuahua, the Gulf Coast and the Greater Antilles. The breeding range formerly extended north to western Washington (AOU 1998). Although an uncommon summer resident in Wyoming, it has not been confirmed as breeding in the area (Cerovski et al. 2004). Breeding records are very rare and the species only occurs in scattered drainages in western Colorado, Idaho, Nevada, and Utah (NatureServe 2008c). Breeding records in Utah are rare in lowland riparian habitats. Records exist in the northern Salt Lake Valley (Weber and Salt Lake counties), Utah Lake near the mouth of the Provo River (Utah County), Cedar City, and Beaver Dam Wash (Washington County). Extensive riparian habitat occurs at the confluence of the Duchesne, White, and Green rivers on the Uintah and Ouray Reservation (Grand and Uintah counties) (Bosworth 2003; Parrish et al. 2002), and sustains the largest breeding population of yellow-billed cuckoo in Utah (BLM 2008d).

The western yellow-billed cuckoo prefers large stands of dense riparian woodlands for nesting that are primarily composed of cottonwood (Populus fremontii), willow (Salix spp.), and mesquite (Prosopis spp.) along riparian corridors in otherwise arid areas (Hughes 1999). Several studies have reported western yellow-billed cuckoos preferring to nest in tracts greater than 25 acres in size. Dense undergrowth may be an important factor in selection of nest sites (Ehrlich et al. 1988), as multi-storied canopy and dense shrubby vegetation provide invertebrate prey and cover for foraging juveniles (Corman and Wise-Gervais 2005). Water is required near the nesting site (Corman and Wise-Gervais 2005; Floyd et al. 2007), which along with dense vegetation, maintain the humidity required in the nesting area for hatching eggs and rearing chicks (Corman and Wise-Gervais 2005, Laymon 1998).

Primary Threats to Survival

The primary threat to western yellow-billed cuckoos is the loss of high-quality riparian habitat suitable for nesting (Corman and Wise-Gervais 2005; Floyd et al. 2007). Riparian habitat throughout the western United States has been modified or destroyed by dams, water diversions, riverflow management, stream channelization and stabilization, conversion to agricultural uses (e.g., livestock grazing), construction of urban and transportation infrastructure, and an increased incidence of wildfire. Habitat fragmentation and invasion of native habitats by non-native plant species (especially tamarisk) result from the aforementioned habitat-modifying factors (78 FR 61622-61665).

Other natural and manmade factors threatening the continued existence of yellow-billed cuckoo include habitat rarity, small overall population size, isolation of populations, lack of immigration, chance weather events, fluctuating availability of prey populations, pesticides, collisions with tall vertical structures during migration, spread of the introduced tamarisk leaf beetle as a biocontrol agent in the Southwest that results in defoliation of nonnative habitats used for nesting, and climate change (78 FR 61622-61665).

Occurrence in the Project Area

The western yellow-billed cuckoo may occur in riparian habitats associated with major river systems in the Project area. The species has been observed in the vicinity of Flaming Gorge (Sweetwater County, Wyoming) (Cerovski et al. 2004). One known occurrence is within the 1-mile buffer of Link U420 along Lake Fork River near Upalco, Utah. The species is also known to breed along the Green River in Uintah County, Utah. Proposed critical habitat is crossed by Alternative WYCO-D in Colorado and Alternatives COUT-A and COUT-B in Utah.

J.6.2.2 Bureau of Land Management, U.S. Forest Service, and State-Sensitive Fish and Wildlife Species

American Bittern (*Botaurus lentiginosus*) – State: Wyoming

The American bittern's breeding range encompasses the northern half of the United States north through Canada to the Northwest Territories. Wintering birds are found along the southern edges of the United States south to Panama. The species is a heron-like bird that inhabits wetlands dominated by tall, emergent vegetation. American bitterns forage on insects, amphibians, crayfish, and small fish and mammals (Lowther et al. 2009). The eastern half of the Project area is within the known breeding range for the American bittern. There is a single known occurrence in the Project area located at the western end of Stevies Lake along the Big Ditch west of Hanna, Wyoming (Link W21). The American bittern is likely to occur in the Project area in suitable wetland and marsh habitats.

American Marten (*Martes americana*) – State: Wyoming

The American marten range includes most of North America from Alaska through forested areas in Canada, northeastern United States, and south along western United States mountain ranges. The species is considered uncommon in Wyoming. Old-growth conifer and mixed stands, including spruce-fir, lodgepole pine, and deciduous forests are typical marten habitats. Mesic stands with closed canopies, living branches lower on trees, abundant woody debris, dense understory, and lengthy fire regimes are habitat characteristics where the American marten often dens in tree cavities, rotten logs, or underground. The marten also forages for small mammals, birds, insects, and fruits in riparian, meadow, forest edge, and rocky alpine areas (WGFD 2010a). The American marten has intrasexual overlapping territories. Home range size varies by geographic location and prey densities. Daily activity patterns are diurnal in winter and crepuscular in summer. Predator-prey dynamics are closely linked, with predator abundance and age structure of marten populations fluctuating with relative prey abundance. A further limiting factor is predation by mammalian and avian predators, with a 50 percent survival rate in the first year (Powell et al. 2003). A portion of the Project area lies within the range of the American marten in northeastern Utah and southwestern Wyoming and the species is likely to breed and forage in the Project area.

American Pika (*Ochotona princeps*) – State: Wyoming

The American pika primarily occurs in higher elevation mountainous regions in the western United States. The species is considered common in Wyoming and can be found year-round throughout the state. Talus slopes or rock outcrops associated with grasses, alpine, and sub-alpine plants providing a food source are typical American pika habitat characteristics. A portion of the Project area lies within the range of the American pika in northeastern Utah and southwestern Wyoming (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

American White Pelican (*Pelecanus erythrorhyncos*) – BLM: Colorado, Utah; State: Utah

The American white pelican is a migratory species that breeds in very localized areas of Wyoming, Colorado, Utah, and Nevada and migrates to the coasts of California and Mexico for the winter (Anderson

1991). The species arrives at breeding grounds in March, where it prefers islands with flat or low gradient slopes associated with fresh water lakes. Preferred foraging areas are shallow lakes, marshlands, and rivers and are typically more than 30 miles from nesting areas. Pelicans are monogamous and pair up after arrival at breeding grounds (Knopf 1979).The species is highly social, nesting in colonies, and often incorporates cooperative feeding strategies (Anderson 1991).

Gunnison Island in the northern arm of the Great Salt Lake is the only known nesting site for the species in Utah and represents one of the four largest breeding colonies in North America (Bosworth 2003). During spring and fall migration, pelicans occur on lakes and reservoirs throughout Utah, Wyoming, and Colorado. The species is regularly observed at the Ouray National Wildlife Refuge in Uintah County, Utah, though breeding has not been observed at this site (USGS 2012). Threats to the species are greatest at nesting colony locations (Bosworth 2003). Migrating or foraging American white pelicans are likely to occur in the Project area.

Aquatic Snails (combined account) – State: Wyoming

Aquatic snails and limpets are soft-bodied mollusks with a spiral, coiled disk-shaped (snails) or cone-shaped (limpets) shell. Approximately 526 species of aquatic snails and limpets are known throughout North America. These species feed on algae, microbes, fungi, and detritus from solid surfaces in aquatic systems (WGFD 2010a). These species can be found in most aquatic systems in the Project area.

Ash-throated Flycatcher (*Myiarchus cinerascens*) State: Wyoming

The ash-throated flycatcher’s breeding distribution spans southwestern Oregon, eastern Washington, to southern Idaho, southwestern Wyoming, Colorado, New Mexico, and northern and central Texas. The species occasionally breeds in Oklahoma, Baja California, and the mainland of Mexico. Outside of the breeding season, the ash-throated flycatcher can be found in northern Baja California; southeastern California; central Arizona; and south into the mainland of Mexico, El Salvador, and Costa Rica. Desert scrub, pinyon-juniper and oak woodland, chaparral, thorn scrub, and riparian woodland are all suitable habitats of the ash-throated flycatcher. In the Project area, the species most commonly uses pinyon-juniper habitats. Nests typically are found in tree cavities, holes in cacti, and in abandoned woodpecker holes and cactus wren nests (Cardiff and Dittmann 2001). The ash-throated flycatcher is known to occur in the Project area along Red Creek at Richards Gap (Links W492, W493, W520) and along the Little Snake River near the Wyoming-Colorado border (WYNDD 2011). The ash-throated flycatcher is likely to breed and forage in suitable habitats throughout the Project area.

Baird’s Sparrow (*Ammodramus bairdii*) – BLM: Wyoming

Baird’s sparrow was once considered one of the most common prairie birds in some areas; it is now rare throughout its range and only abundant in local areas with suitable grassland habitat. During breeding season, Baird’s sparrow prefers idle or lightly grazed native grasslands. Native prairie appears to be preferred habitat, although there is some use of crested wheatgrass (*Agropyron cristatum*) (Casey 2000). In dry years or drier parts of the range, breeding occurs in grassy sloughs, alkali flats, and depressions in low lying grasslands. Baird’s sparrows leave their breeding grounds in August and spend the winter in extreme southeastern Arizona, southern New Mexico, and Mexico (Luce and Keinath 2003). Non-breeding habitat consists of overgrown fields and open grasslands with very few woody plants greater than 1 meter in height (Gordon 2000). In the United States, breeding occurs in central and eastern Montana, and North and South Dakota. In Wyoming, there is circumstantial evidence of breeding in Laramie, Platte, Albany, Converse, and Campbell counties and observations of the species in central and eastern portions of the state during migration (Cerovski et al. 2004). All suspected breeding locations occur outside of the Project area. Transient individuals may fly through the Project area during seasonal migration, but it is a secretive and difficult species to see during migration (Luce and Keinath 2003).

Bald Eagle (*Haliaeetus leucocephalus*) – BLM: Wyoming, Colorado, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Colorado, Utah

Once an endangered species, the FWS now considers the bald eagle fully recovered; the species was delisted on August 8, 2007 (72 FR 37345). It continues to receive federal protection through the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, as well as being protected as a BLM, USFS, and State sensitive species. Breeding habitat for the bald eagle is typically mature and old-growth forests within 6.5 miles of large bodies of water with availability of food sources such as fish, waterfowl, and sea birds. However, the distance to water may not be as important as the presence of superdominant trees, areas of lower human disturbance, and abundance of fish species (Livingston et al. 1990). Nesting is in either deciduous or conifer, but generally in the largest tree available. Nests often are reused in successive years. Wintering habitat is found along large rivers and unfrozen lakes throughout the range of the species; juveniles are more likely to move large distances than adults that typically only migrate as needed to find food (Buehler 2000).

Both breeding and wintering sites are found in the Project area portions of Wyoming. In Colorado, there is both good wintering and nesting areas, though nesting is uncommon. The Colorado River near Ruby Canyon (30 miles downstream of the confluence with the Gunnison River) and Horsethief Canyon State Wildlife Area are known nesting locations and in the Project area. In Utah, the species is widespread during winter, but very few known breeding pairs exist. According to available data, one nest site occurs in Emery County south of Castledale (approximately 4 miles southwest of Link U731) and two occur in Grand County (one along the Colorado River near Nine Mile Bottom approximately 6 miles southeast of Link U490 along the Colorado River between the Colorado-Utah border and Bitter Creek approximately 5 miles southeast of Link U490) (Bosworth 2003).

Big Brown Bat (*Eptesicus fuscus*) – State: Wyoming

A medium to large bat, the big brown bat is a habitat generalist, found in timberline meadows to lowland deserts, although it is most abundant in deciduous forest and suburban and mixed agricultural use areas (Bat Conservation International 2009a). Maternity roosts are established in buildings, barns, bridges, and bat houses. The species hibernates in caves, preferring areas near the cave entrance where temperatures are low and the relative humidity is below 100 percent (Schmidly 1991). Often big brown bats are found in association with Yuma and little brown myotis and Brazilian free-tailed and pallid bats (Schmidly 1991). Big brown bats forage in tree foliage or cleared meadows with small beetles comprising the majority of the diet (Barbour and Davis 1969; Bat Conservation International 2009a; Schmidly 1991). Caves, trees, mines, buildings, bridges, rock crevices, cliff swallow nests, and tunnels are used for day roosts (Bradley et al. 2006; Schmidly 1991), with roosts containing small groups of bats to several hundred (Bradley et al. 2006). The big brown bat occurs from extreme northern Canada all the way to the extreme southern tip of Mexico (Bat Conservation International 2009a). There are no known occurrences of big brown bats in or near the Project area; however, the entire Project area lies within the range of the species.

Big Free-tailed Bat (*Nyctinomops macrotis*) – BLM: Utah; State: Utah

The big free-tailed bat is associated with canyon lands and very rocky country. It is generally associated with floodplain-arroyo habitats at low elevation in Nevada (Bradley et al. 2006) and lowland riparian, desert shrub, and montane forests of Colorado and Utah (Oliver 2000).The species primarily roosts on cliff faces, but occasionally has been found in buildings and caves (Bradley et al. 2006). The big free-tailed bat is a summer resident of Colorado and Utah. In Colorado, it is found on both sides of the Continental Divide as far north as the Colorado River in Mesa County. In Utah it has been found as far north as Utah County (Bradley et al. 2006). Portions of the Project area are within summer range of the species and contain suitable habitat; the big free-tailed bat is likely to forage throughout the Project area in Colorado and Utah.

Bigmouth Shiner (*Notropis dorsalis*) – State: Wyoming

The bigmouth shiner inhabits riverine systems from northern Minnesota to eastern Illinois and west to central Wyoming (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system, which may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Black-rosy Finch (*Leucosticte atrata*) – State: Wyoming

The black rosy finch is found throughout the Great Basin and Intermountain regions of the United States. The species seasonally migrates between lower and higher elevations, and rarely nests below 10,000 feet (WGFD 2010a). The species often is observed in winter in grasslands, agricultural areas, roadsides, and residential areas (WGFD 2010a). The black rosy finch primarily feeds on seeds and insects with seeds being the dominate food source during the winter (Johnson 2002). The entire Project area is in the known range of the black rosy finch. The Heritage data provided included one known occurrence of the species from in the Project area near Crescent Junction, Utah, approximately 7 miles west of Thompson along Link U490. The black rosy finch may forage and winter in the Project area.

Black Swift (*Cypseloides niger*) – BLM: Utah; State: Utah

The black swift is an elusive bird that feeds at high altitudes. The black swift’s nest site requirements are very specialized; nests are always found behind waterfalls in dark recesses with unobstructed access (Knorr 1961). Black swifts typically nest in colonies of less than 10 pairs (Marín 1997) and lay only one egg. In Utah and Colorado, breeding occurs in localized areas. The species migrates out of the Project area for winter. Known breeding sites occur in Utah at Bridal Veil Falls, Aspen Grove, and Stewart Falls in the Uinta National Forest, all near Provo (UDWR 2005a), and in Colorado from Garfield County (NatureServe 2009). The black swift may migrate through the Project area, but nesting individuals are unlikely to occur near alternative routes. One known occurrence crosses the centerline of Link U420 along Red Creek near Fruitland, Utah.

Black Tern (*Chlidonias niger*) – State: Wyoming

The black tern is a localized breeder throughout most of the northern Great Plains and Great Basin and winters along the coasts of Central and South America. It nests in semi-colonies in shallow, freshwater wetlands on floating material or on the ground in the emergent vegetation. Nests are typically within several feet of open water (Casey 2000). The Project area is on the southern boundary of the breeding range of the species, but the black tern is known to occur in the Project area. The species is believed to breed in the vicinity of Elk Mountain, Wyoming, but breeding has not been confirmed (Cerovski et al. 2004). Breeding has not been documented elsewhere in the Project area, though suitable wetland habitat also can be found in Colorado and Utah (Ridgely et al. 2007). Black tern occurrences have been noted from Pelican Lake (Utah), Ouray (Utah), and Hogback Lake (Wyoming).

Black-crowned Night-heron (*Nycticorax nycticorax*) – State: Wyoming

The black-crowned night-heron inhabits most of the western hemisphere from Saskatchewan and Alberta south to Tierra del Fuego, Argentina. The species inhabits a wide variety of wetland habitats including fresh, brackish, and salt-water situations such as swamps, streams, rivers, pools, ponds, lakes, lagoons, tidal mudflats, salt marsh, freshwater marsh, ditches, canals, reservoirs, and wet agricultural fields. Black-crowned night-herons wade through shallow waters feeding on a wide variety of foods such as leeches, earthworms, aquatic and terrestrial insects, prawns and crayfish, clams, mussels, squid, fish, amphibians, lizards, snakes, turtles, small mammals, birds, eggs, plant materials, and even garbage from landfills (Hothem et al. 2010). There are no known occurrences in the Project area; however, the majority of the Project area falls within the known range of the black-crowned night-heron. The black-crowned night-heron is likely to breed and forage in suitable wetland habitats in the Project area.

Bluehead Sucker (*Catostomus discobolus*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Utah

The bluehead sucker occurs in mountain streams and large rivers that are often turbid or muddy and sometimes alkaline. It is usually found in swift currents but also has been found in moderate to still water with very little vegetation (UDWR 1998). Current known distribution of the bluehead sucker includes the Little Snake (Carbon County) and Green (Sweetwater County) river drainages in Wyoming; the Little Snake and Green (Moffat County), White (Rio Blanco County), and Colorado (Mesa County) river drainages in Colorado; and the Colorado River Drainage including the Colorado (Grand County), Green (Uintah, Emery, and Grand counties), San Rafael (Emery County), Price (Carbon County), and White (Uintah County) rivers in Utah (UDWR 1998). The bluehead sucker is threatened by habitat alteration and loss, introduction of exotic fished, and hybridization with other species of sucker (UDWR 1998). Populations of the species may be declining (UDWR 1998; WGFD 2010a). Alternative routes are within the known range of the bluehead sucker in Wyoming, Colorado, and Utah. The bluehead sucker is known to occur in the Project area.

Bobolink (*Dolichonyx oryzivorus*) – BLM: Utah; State: Wyoming, Utah

The bobolink is a neotropical migrant that has one of the longest annual migrations of any North American songbird, approximately 12,500 miles. The species is found throughout the northern United States from the east to the west. The species leaves breeding grounds in August and winters in southern South America. In the west, the bobolink nests and forages primarily in wet meadows, wet grasslands, and irrigated agricultural fields associated with riparian or wetland areas. Nests are built on the ground, often located at the base of large forbs (UDWR 205a0). Habitat for the bobolink is found throughout Wyoming, Colorado, and Utah. Isolated breeding populations occur in northern Utah, primarily along the Wasatch Mountains (Bosworth 2003). In Wyoming, bobolinks have been observed throughout the state, but are considered to be an uncommon summer resident (WGFD 2010a). In Colorado, substantial populations occur in the Yampa and White river valleys, and near Boulder, Colorado (Beason et al. 2008). The bobolink may breed and forage in suitable habitats in the Project area.

Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*) – BLM: Utah; USFS: Manti-La Sal and Uinta National Forests; State: Wyoming, Utah

The Bonneville cutthroat trout occurs in streams and lakes of the Bonneville Basin and Virgin River drainage. It is typically found in headwater streams at high elevations entering and exiting the Bonneville Basin, but also located in perennial streams of the Deep Creek Mountains and the Virgin River drainage in the Pine Valley Mountains. The species is threatened by loss, degradation, and fragmentation of habitat, overutilization, hybridization with nonnative trout, and disease (Bosworth 2003). Bonneville cutthroat trout was formally believed to be extinct (UDWR 1998). Conservation and stocking efforts have stabilized many extant populations, re-established extirpated populations, and expanded the range of the species (Bosworth 2003). Current known distribution of the Bonneville cutthroat trout includes streams in the Deep Creek Mountains and the Santa Clara, Sevier, and Virgin River drainages in Utah and Nevada (UDWR 1998). Suitable habitat for the species can be found on the Manti-La Sal and Uinta National Forests. Alternative routes are within the known range of the Bonneville cutthroat trout in Utah and the species is known to occur in the Project area. Known occurrences of the species in the Project area are in

Lake Fork east of Thistle, Utah, where this creek is crossed by Link U460; along Sheep Creek where it is crossed by Link U420; and in Tie Fork where it is crossed by Link U539.

Brassy Minnow (*Hybognathus hankinsoni*) – State: Wyoming, Colorado

The brassy minnow inhabits the Missouri and upper Mississippi river drainages from eastern Wyoming and Montana across the northern states to Ontario and New York and south to Kansas and Missouri (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Brewer's Sparrow (*Spizella breweri*) – BLM: Wyoming, Colorado; State: Wyoming

Brewer's sparrow is a neotropical migrant; though some populations may only migrate a short distance between breeding and wintering grounds. The species breeds from southeastern Alaska and Saskatchewan south to southern California and southwestern Kansas. Brewer's sparrow migrates south to winter between southern California, western Texas, and central Mexico. Within the species breeding range, the Brewer's sparrow is considered a shrub steppe obligate, strongly associated with sagebrush in areas with scattered shrubs and short grass. It nests low in sagebrush, other shrub, or cactus. It is mainly a Great Basin species, but occurs in shrub steppe habitats in all states in the Project area, breeding throughout Utah, Wyoming, and western Colorado. The entire Project area lies within the breeding range of the species, and the Brewer's sparrow is known to occur in suitable habitats throughout the entire Project area during the breeding season (mid-April through July) (Rotenberry et al. 1999).

Brown-capped Rosy Finch (*Leucosticte australis*) – State: Wyoming

The species inhabits the mountainous areas of extreme southern Wyoming through Colorado and into northern New Mexico. The species is considered relatively sedentary and only migrates elevationally with the seasons. Brown-capped rosy finches inhabit cliffs, caves, rock slides, or old buildings during breeding season and open areas including alpine tundra and high parks and meadows during the winter. Brown-capped rosy finches rarely nest below 10,000 feet (WGFD 2010a). The species forages on seeds, insects, and spiders (Johnson et al. 2000). The Project area lies on the boundary of the known range for the species in Colorado and Wyoming (WGFD 2010a). The brown-capped rosy finch may forage and winter in the Project area.

Burrowing Owl (*Athene cunicularia*) – BLM: Wyoming, Utah; State: Wyoming, Colorado, Utah

The burrowing owl is a small, ground-dwelling owl with relatively long legs. The species often is seen active during the day, with peaks at dawn and dusk. The burrowing owl is a neotropical migrant that breeds throughout the Western United States and migrates to southern California and Central America during the winter. The species lives in a variety of shrub-dominated or sparsely vegetated habitats in deserts, grasslands, prairies, farmland, and sagebrush steppe communities. They nest in previously excavated burrows in in the ground and are largely dependent on prairie dog colonies or other fossorial mammals for suitable nesting sites (NatureServe 2009). Occasionally, burrowing owls nest in manmade structures such as culverts. The entire Project area lies within the breeding range of the species and the burrowing owl is known to breed and forage throughout the Project area (Bosworth 2003). More than 60 known burrowing owl occurrences fall in the Project area in Colorado, Utah, and Wyoming.

Bushtit (*Psaltriparus minimus*) – State: Wyoming

The bushtit is found throughout much of the western United States from extreme southern British Columbia south through central Mexico to Guatemala. The species inhabits a wide variety of habitats from forested mountains to arid brush. Bushtits tend to prefer open mixed woodland with some evergreen foliage or shrubby understory. In the Project area, the bushtit nests only in juniper woodlands (WGFD 2010a). The species forages by gleaning small insects and spiders from vegetation (Sloane 2001). The Project area is within the known range of the bushtit, and the species is likely to breed and forage in suitable habitats in the Project area.

California Floater (*Anodonta californiensis*) – State: Wyoming, Utah

The California floater is a freshwater mussel that inhabits lakes, ponds, and low-gradient streams (UDWR 2011a). There are currently seven known California floater populations in eastern Utah. Several historic populations (including Utah Lake) have been extirpated, and reported sightings of the California floater in Tooele County have not been verified (Oliver and Bosworth 1999). The distribution of the California floater in Wyoming is limited to extreme western Lincoln and Uinta counties (WGFD 2010a). The only known California floater population in the Project area occurs in the Burraston Ponds south of Mona (1 mile of the centerline of Link U650). Specimens have been collected at this location.

Canvasback (*Aythya valisineria*) – State: Wyoming

The WGFD classifies the canvasback as a Species of Special Concern with a Native Species Status of 3 because its breeding population in Wyoming is restricted in numbers, habitat is restricted, and is vulnerable with no recent or on-going significant loss (WGFD 2010a).

Canvasbacks are ecological specialists and require deep, open, permanent ponds, marshes and potholes for feeding, resting, and courtship activities. They are omnivorous and their diet consists of aquatic vegetation and aquatic invertebrates.

Heritage data indicated the canvasback is not known to occur in the Project area (WYNDD 2011). However, Christmas Bird Count and Breeding Bird Survey data include occurrences of the species near water bodies in the Project area (Gough et al. 1998). Seasonal migrants of the species may occur in portions of the Project area.

Canyon Mouse (*Peromyscus crinitus*) – State: Wyoming

Canyon mouse habitat distribution includes Oregon south to northwestern Mexico and east to Colorado and Wyoming. The species is considered rare in Wyoming as it is likely limited to isolated bluffs and tabletop mesas of Sweetwater County. In Wyoming, the canyon mouse occurs in limber pine or juniper areas with sandy soil for digging burrows or sandstone rock outcrops that provide shelter. A portion of the Project area lies within the range of the canyon mouse in northeastern Utah, northwestern Colorado, and southwestern Wyoming (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

Caspian Tern (*Hydroprogne caspia*) – State: Wyoming

The Caspian tern is found throughout the world. In North America, the species has a widely scattered distribution and inhabits coastal estuarine, salt marsh, and islands along the coastlines to rivers and salt lakes in the interior of the continent. Caspian terns feed primarily on fish, only occasionally taking crayfish and insects (Cuthbert and Wires 1999). There is a single known occurrence of the species on the edge of the Project area at Lake Boreham west of Myton, Utah, along Link U430. The Project is within the known range of the Caspian tern and the species is likely to breed and forage in the Project area.

Chestnut-collared Longspur (*Calcarius ornatus*) – State: Wyoming

The chestnut-collared longspur's breeding range includes southern Alberta to southern Manitoba, southeast of the Rocky Mountains to northeastern Colorado, western Kansas, north-central Nebraska, and western Minnesota, with a non-breeding range that includes California, northern Arizona, eastern New Mexico, eastern Colorado, and central Kansas south to northern Sonora, Chihuahua, Zacatecas, San Luis Potosi, and southern Texas. Cropland/hedgerow, grassland/herbaceous, and desert are all terrestrial habitats of the chestnut-collard longspur. During the breeding season, the species uses level to rolling mixed-grass and shortgrass uplands and moist lowlands in drier habitats. Grasslands and deserts with primarily grasses and forbs, as well as cultivated fields near water sources, are used during non-breeding parts of the year. The species avoids shrubby areas but uses scattered shrubs and other lower perches for singing (WGFD 2010a). The chestnut-collared longspur is known to occur in the Project area (WYNDD 2011) and is likely to breed and forage in suitable habitat in the Project area in Colorado and Wyoming.

Clark's Grebe (*Aechmophorus clarkii*) – State: Wyoming

The breeding range of Clark's grebe extends from Washington to Wyoming, south to California, Arizona, New Mexico, and Mexico and winters on the Pacific coast from central California south to Mexico. Clark's grebe habitats include marshes, lakes, and bays during migration and also along sheltered seacoasts in winter. They typically nest among tall plants growing in water on the edge of large areas of open water systems including estuaries, lagoons, rivers, lakes, and wetlands. Drought-related habitat changes have degraded some of the historic nesting sites and reduced the number of nesting pairs detected during the past several years (WGFD 2010a). There are known occurrences of Clark's grebe near alternative routes.

Cliff Chipmunk (*Tamias dorsalis*) – State: Wyoming

Cliff chipmunk habitat distribution includes from southern Idaho south into northern Mexico. The species is considered rare in Wyoming as it is limited to areas of rock outcrops near Sage Creek in Sweetwater County. The cliff chipmunk inhabits steep, rocky hillsides, rock outcrops, cliffs, and talus slopes in juniper woodlands where it nests in cliff crevices, rocky bluffs, and underground burrows. A portion of the Project area lies within the range of the cliff chipmunk in northeastern Utah, northwestern Colorado, and southwestern Wyoming (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus*) – BLM: Wyoming, Colorado, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Colorado, Utah

The Colorado River cutthroat trout is endemic to the cold tributaries of the Green and Colorado River systems where it occupies headwater streams and mountain lakes. The species is threatened by loss, degradation, and fragmentation of habitat; overutilization; hybridization with nonnative trout; and disease (Bosworth 2003). The range of the species has dramatically declined since the mid-1800s and currently occupies approximately 13 percent of its historic range (Hirsch et al. 2006). Recent conservation actions and re-introductions have helped to reduce threats and stabilize populations. Rangewide populations are probably increasing (Bosworth 2003). The Colorado River cutthroat trout is known to occur in the Project area in headwater streams of the Green, Little Snake, Colorado, and Yampa rivers. Known occurrences crossed by centerlines occur in the Indian Creek where crossed by Link U630 and in South Fork Gordon Creek where crossed by Link U537

Columbia Spotted Frog (Rana luteiventris) – BLM: Wyoming, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Utah

The Columbia spotted frog is a highly aquatic frog with a relatively large range in the northwestern United States and British Columbia (Stebbins 2003). An inhabitant of ponds, creeks, streams, and lakes, they are frequently found in areas with dense willows (*Salix* spp.) and basking sites (Reaser and Pilliod 2005). The species is not known to occur in Colorado, and the Project area is outside of the species range in Wyoming (WGFD 2010a). In Utah, populations of Colombia spotted frogs have declined and are threatened by habitat loss, competition with nonnative species, and disease (Bailey et al. 2006). The Columbia spotted frog is known to occur in Juab, Sanpete, Utah, and Wasatch counties in Utah (NatureServe 2009). Known occurrences within 1-mile of alternative routes are along Links U600, U631, and U650. Known occurrences are south of Burraston Ponds (south of Mona, Utah) in the creeks and washes where it is crossed by Link U650.

Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Colorado, Utah

The Columbian sharp-tailed grouse is one of six recognized subspecies of the sharp-tailed grouse in North America, based on geographic location, size, plumage, and types of habitat that it occupies. The Columbian sharp-tailed grouse inhabits big sagebrush (*Artemisia tridentata*), shrubsteppe, mountain shrub, and riparian shrub plant communities. It nests near or under shrubs or small trees if available (Hoffman and Thomas 2007). Leks of Columbian sharp-tailed grouse are on knolls, ridge-tops, or benches that are higher than the surrounding topography; leks are often in taller vegetation and shrub cover than the other subspecies. Nests are typically located within 0.6 mile of the lek at which they were hatched (Giesen and Connelly 1993). The species does not migrate outside of the breeding range, but may move short distances due to snow. Columbian sharp-tailed grouse is known to occur in the Project area in south-central portion of Wyoming in Carbon County immediately west and north of the Medicine Bow National Forest and in Moffat and Rio Blanco counties in Colorado (Hoffman and Thomas 2007). There are known occurrences in the Project area along Link C13.

Common Loon (*Gavia immer*) – State: Wyoming

The common loon's breeding range includes Iceland, Greenland, and the lake regions of the northern United States and Canada. The winter range is along the Pacific, Atlantic, and Gulf coasts. In Wyoming, the common loon distribution is small and nests only occur in northwestern parts of the state, although the common loon is found on lakes across most of Wyoming during migration. Breeding habitat requires both shallow and deep water areas with nest sites on small islands, quiet backwaters, or mainland shores. Ideal common loon nesting lakes have at least partially forested, rocky shorelines; an area of shallow water with emergent vegetation; and a steep slope along the shoreline for an underwater approach to nests (WGFD 2010a). Given its range and predicted distribution, the common loon is likely to occur in the Project area.

Common Shiner (*Luxilus cornutus*) – State: Wyoming, Colorado

The common shiner inhabits riverine systems across the eastern United States and Canada west to eastern Wyoming (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Cornsnake (*Elaphe guttata*) – BLM: Utah; State: Utah

The cornsnake is primarily known from east of the continental divide (Bosworth 2003). The species is found in moist areas such as stream courses, canyons, arroyos, mountain streams, and farmland. Important components of cornsnake habitat are a permanent water source and good cover for daytime retreat or hibernation. Although primarily a diurnal species, this snake is active at night in warm weather (Degenhardt et al. 1996; Stebbins 2003). This constrictor's flattened belly makes it an excellent climber, enabling it to forage in trees and shrubs for small mammals, lizards, birds and their eggs, and even climb cave walls while hunting bats (Degenhardt et al. 1996; Stebbins 2003). Scattered populations of cornsnake occur in Utah along the Colorado and Green River corridors from Moab in Grand County to Dinosaur National Monument in Uintah County (Bosworth 2003). Suitable habitat for the cornsnake occurs in the Project area and the species may occur along alternative routes that are near the Green and Colorado rivers and their tributaries.

Desert Bighorn Sheep (*Ovis canadensis nelsoni*) – BLM: Colorado; USFS: Manti-La Sal National Forest

The desert bighorn sheep is at home in the rugged, steep mountains and canyons of the western United States and northern Mexico. The range of *O. c nelsoni* extends from central Nevada, across the southern third of Utah, northwestern Arizona, and southern California (Shackelton 1985). For a detailed species account, refer to Section 3.2.7.4.

Devil Crayfish (*Cambarus diogenes*) – State: Wyoming

The devil crayfish are crustaceans with red tips on their pincers and along the margins of their body. The species has a large native range from Ontario, Canada, to Texas and Wyoming to North Carolina. The species builds burrows in forested habitats near temporary or permanent water or where the water table is near the surface (WGFD 2010a). There are no known occurrences of the species in the Project area; however, potentially suitable habitat may be present in the Project area.

Dwarf Shrew (*Sorex nanus*) – State: Wyoming

Local populations of dwarf shrew are distributed from Montana and South Dakota south to Arizona and New Mexico. The dwarf shrew likely occurs in small isolated populations as it is considered rare in Wyoming. The dwarf shrew is not limited to areas near permanent water and occurs in diverse habitats including alpine tundra, subalpine forests, rock-sides, montane forests, and foothills to arid shortgrass prairie. A portion of the Project area lies within the range of the dwarf shrew in northeastern Utah, northwestern Colorado, and southwestern Wyoming (WGFD 2010a). The species is likely to breed and forage in suitable habitat in or near the Project area.

Eastern Red Bat (*Lasiurus borealis*) – State: Wyoming

The habitat distribution of the eastern red bat includes most of the eastern United States from the Continental Divide to Canada south to Mexico. The red bat occurs seasonally in the eastern third of Wyoming and is considered rare in the state. Red bat foraging habitats include forested areas, riparian corridors, and shelter belts of vegetation where they primarily predate moths and other soft bodied insects. Roosts typically occur in mature hardwoods, shrubs, and conifers, and occasionally on the ground in leaf litter. A portion of the Project area lies within the range of the eastern red bat in southwestern Wyoming (WGFD 2010a). The species is likely to breed and forage in suitable habitat in or near the Project area.

Eureka Mountainsnail (*Oreohelix eurekensis*) – State: Utah

The Eureka mountainsnail is endemic to Utah and has only been documented in Juab, Duchesne, and Tooele counties with one population in northern Grand County. The species of terrestrial snail is found in shrubland and forested habitats, usually around limestone outcrops or soils with high calcium concentration (UDWR 2011a). There is one known Eureka mountainsnail occurrence in the Project area in the Red Narrows on the southern end of Uinta National Forest and other occurrences have been noted in vicinity. The Eureka mountainsnail is likely to occur in suitable habitats in the Project area.

Fairy and Tadpole Shrimp (combined account) – State: Wyoming

Fairy shrimp are found throughout North America. Tadpole shrimp inhabit areas west of the Mississippi River and in the Arctic of North America. These species range in size from 0.4 to 2.4 inches in length. Both fairy and tadpole shrimp inhabit temporary wetlands as well as permanent waters (WGFD 2010a). There are no known occurrences of the species in the Project area; however, potentially suitable habitat may be present in the Project area.

Fatmucket (*Lampsilis siliquoidea*) – State: Wyoming

The fatmucket is known from river systems throughout the Midwest as far west as Wyoming (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Ferruginous Hawk (*Buteo regalis*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Colorado, Utah

During the breeding season, ferruginous hawk habitat includes grasslands, agricultural lands, sagebrush/saltbush/greasewood shrub lands and the interface between pinyon-juniper and shrubsteppe habitats. The species is known to breed from the Canadian Prairie Providences south to Oregon, Nevada, Arizona, and Oklahoma (WGFD 2010a). Nesting sites are elevated, often in cliffs, buttes, and creek banks. During the winter, the species migrates south to the central and southern portions of its breeding range south into Baja California where it uses open farmlands, grasslands, deserts, and other arid regions (WGFD 2010a). The species' diet consists of lagomorphs, pocket gophers, and prairie dogs, but also can include other small mammals and birds (Bechard and Schmutz 1995).

The western two-thirds of Carbon County has one of the highest nesting densities of ferruginous hawks in Wyoming (BLM 2012d). In Colorado, ferruginous hawks nest in the eastern prairies, but have also been observed in the northwestern portion of the state (Beidleman 2000). The species occurs throughout most of Utah, in appropriate habitat. It is most prevalent in the southern Bonneville Basin in southwest Utah and the Colorado Plateau in eastern Utah (Bosworth 2003). The species is known to breed and forage and is believed to be relatively common throughout the Project area.

Flammulated Owl (*Otus flammeolus*) – USFS: Ashley, Manti-La Sal, and Uinta National Forests

The flammulated owl is a migratory cavity-nesting owl of mid-elevation, open ponderosa pine or other similarly structured dry forest. Nesting occurs from southernmost British Columbia through the forested ranges of Washington, Oregon, and portions of California and Nevada into central Mexico (Mccallum 1994). The species winters from central Mexico to Guatemala (Ehrlich et al. 1988) with migration most likely being tied to prey availability. The species consumes nocturnal arthropods, especially moths, beetles, crickets, and grasshoppers (Mccallum 1994). Flammulated owls inhabit mid-level open conifer forests, and are associated with ridges and upper slopes. The species is a secondary cavity nester and prefers mature growth forest. The Project area is within the known breeding range of the flammulated owl and the species is known to occur on the Ashley, Uinta, and Manti-La Sal National Forests (USFS 2013b). The flammulated owl has been observed in the Project area north of Helper, Utah, along Link U545 (UNHP 2012).

Flannelmouth Sucker (*Catostomus latipinnis*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Utah

The flannelmouth sucker inhabits pools or streams and large rivers with little to no vegetation and clear to murky waters over rock, gravel, or mud substrate. The species was once widespread throughout the Colorado River basin but currently only occupies 45 percent of their historic range (WGFD 2010a). Threats to the species include habitat fragmentation and competition and hybridization with nonnative fishes (WGFD 2010a). Current known distribution of the flannelmouth sucker includes the Little Snake (Carbon County) and Green (Sweetwater County) River drainages in Wyoming; the Little Snake and Green (Moffat County) and Colorado (Mesa County) River drainages in Colorado; and the Colorado River drainage including the Colorado (Grand County), Green (Uintah, Emery, and Grand counties), San Rafael (Emery County), and Price (Carbon County) rivers in Utah (UDWR 1998). Some alternative routes are within the known range of the flannelmouth sucker in Wyoming, Colorado, and Utah and the species is known to occur in the Project area.

Flathead Chub (*Platygobio gracilis*) – State: Wyoming, Colorado

The flathead chub inhabits turbid rivers of the Great Plains from the Northwest Territory in Canada south to Oklahoma and New Mexico (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Forster’s Tern (*Sterna forsteri*) – State: Wyoming

The breeding range for Forster’s tern includes the Central Prairie Provinces of Canada south to southern California, western Nevada, southern Idaho, northern Utah, northern and eastern Colorado, central Kansas, western, Nebraska, northern Iowa, northwestern Indiana, to eastern Michigan; coastally from northeastern Mexico, southeastern Texas to southern Alabama; along the Atlantic coast from Long Island to South Carolina. Forster’s tern winters in central California and Baja California to Oaxaca and Guatemala; Costa Rica; northern Veracruz to western Florida; Virginia to northern Florida; Bahamas; and Greater Antilles. The Forster’s tern breeds in marshes with lots of open water and large stands of island-like vegetation. It winters in marshes, coastal beaches, lakes, and rivers (McNicholl et al. 2001). Three occurrences of the Forster’s tern are along Link W30 southwest of Rawlins near Hogback Lake.

Franklin’s Gull (*Leucophaeus pipixcan*) – State: Wyoming

During summer, Franklin’s gull is found in Alberta and Saskatchewan, Canada south to northern South Dakota with disjunct populations in northwestern Wyoming, along the Great Salt Lake in Utah and near Reno, Nevada. The species winter along the Pacific coast of South America. The species breeds along freshwater marshes and always nests over water on floating mats built on the water’s surface, on muskrat houses, or on floating debris. Franklin’s gull has a highly variable diet, feeding on invertebrates (earthworms, grubs, insects, snails); seeds; and other vegetable matter, mice, fish, and crabs (Burger and Gochfeld 2009). Most Franklin’s gull populations are known from outside of the Project area. However, the species may occur in suitable aquatic habitats in the Project area in Wyoming (WGFD 2010a).

Fringed Myotis (*Myotis thysanodes*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Utah

The fringed myotis occurs in a wide range of habitat from lowland riparian and desert shrub to montane forests and meadows at an elevation range of 2,400 to 8,900 feet. It typically roosts in caves, mines, and buildings (Bradley et al. 2006). The fringed myotis most likely does not migrate, but hibernates during the winter (Oliver 2000). It is widely distributed throughout Wyoming, Colorado, and Utah but is not common. The Project area is within the range of the species and contain suitable habitat. The fringed myotis is likely to forage throughout the Project area in Wyoming, Colorado, and Utah.

Grasshopper Sparrow (*Ammodramus savannarum*) – BLM: Utah; State: Wyoming, Utah

The grasshopper sparrow is a neotropical migrant that breeds throughout the Great Plains and eastern United States and spends winters in the southern United States, Mexico, and Central America. It prefers grasslands with moderately deep litter, patches of vegetation alternated with bare surface areas, and sparse woody vegetation coverage (Smith 1963). Grasshopper sparrows nest on the ground at the bases of grass clumps from April to June (Vickery 1996). The Project area is on the border of the species’ range and breeding is believed to be rare in the western Wyoming and Utah (Bosworth 2003; WGFD 2010a). Grasshopper sparrow may occasionally breed in the Uinta Basin, but no heritage records exist in the area (Bosworth 2003). The grasshopper sparrow is likely to occur transiently in the Project area during seasonal migrations, and may occasionally use the Project area for breeding or foraging.

Great Basin Gopher Snake (*Pituophis catenifer deserticola*) – State: Wyoming

The Great Basin gopher snake is found from southern British Columbia to northern Arizona and from Nevada to Colorado in sagebrush and desert habitats (Stebbins 2003; WGFD 2010a). The species primarily feeds on small mammals such as mice, gophers, ground squirrels, and rabbits (WGFD 2010a). Except for Carbon County, Wyoming, the entire Project area lies within the known range of the Great Basin gopher snake. The Great Basin gopher snake is likely to occur in the Project area.

Great Basin Pocket Mouse (*Perognathus parvus*) – State: Wyoming

The Great Basin pocket mouse distribution includes the majority of the Great Basin from south-central British Columbia south to southern California and northern Arizona. The species is considered rare in Wyoming as it only occurs in the southwestern corner of the state. Sagebrush dominated areas, steppe and arid open shrub, and woodlands are typical Great Basin pocket mouse habitats. A portion of the Project area lies within the range of the Great Basin pocket mouse in southwestern Wyoming and central Utah (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

Great Basin Spadefoot (*Spea intermontana*) – BLM: Wyoming, Colorado; State: Wyoming

The Great Basin spadefoot lives in drier habitats than most amphibians. It is fairly abundant throughout the Great Basin, but becoming rarer at the extremities of the Great Basin in southern Wyoming and western Colorado (UDWR 2005a). The Great Basin spadefoot is found in sagebrush communities below 6,000 feet with loose soil for burrowing. The Great Basin spadefoot is found primarily west of the Continental Divide in the Wyoming Basin and Green River Valley in Wyoming (WGFD 2005c, 2010a) and north of the Uncompahgre Plateau in Colorado (CPW 2010). The Project area is almost entirely within the known range of the Great Basin spadefoot. There are numerous known occurrences in the Project area in Wyoming and Colorado.

Greater Sandhill Crane (*Grus canadensis tabida*) – State: Wyoming, Colorado

A large, heavy-bodied, long-lived bird, the greater sandhill crane breeds on tundra, grasslands, and marshes (National Geographic Society 1999), in isolated bogs and marshes surrounded by shrub and forest habitat (Tacha et al. 1992). The species nests across large expanses of Siberia, Alaska, and northern Canada but also in much smaller areas around the Great Lakes, Idaho/Wyoming border, northern Nevada, northwestern Colorado, Oregon, the southeastern United States, and Cuba (Tacha et al. 1992). Breeding does not occur until the birds reach 2 to 7 years of age, with both parents providing care of the young. Large flocks form during migration, composed of numerous pairs or family groups. The wintering range includes south-central California; southeastern Arizona; southern New Mexico; west and central Texas; and scattered areas along the Gulf Coast, peninsular Florida, and northern Mexico (Tacha et al. 1992). Known occurrences in the vicinity of the Project area are along the North Platte, Little Snake, and Yampa rivers and in Routt National Forest. Only two confirmed occurrences are in the Project area. These occurrences are where Link C100 crosses the Yampa River, approximately 11 miles east of Craig, Colorado. In addition to these known occurrences, greater sandhill cranes are likely to breed, forage, and migrate through the Project area.

Greater Short-horned Lizard (*Phrynosoma hernandesi*) – State: Wyoming

The greater short-horned lizard can be found from extreme southern Canada to southern Durango, Mexico, and from Nevada to western Nebraska. The species feeds primarily on ants, but will also eat other insects, snails, and spiders (Stebbins 2003). There are no known occurrences of the species in the Project area; however, the entire Project area falls within the range for the species.

Iowa Darter (*Etheostoma exile*) – State: Wyoming, Colorado

The Iowa darter inhabits clear to lightly turbid water in small cool lakes, bogs, ponds, and in slow-moving waters of small brooks to medium rivers. The species is known to occur throughout much of southern Canada and northern United States from New York to Montana and as far south as New Mexico (Fuller and Neilson 2012; WGFD 2010a). In the Project area, the Iowa darter is known to occur in the Yampa River between Dinosaur National Monument and Craig, Colorado. In Utah, the species is known from a single collection in the Green River near Jensen (Fuller and Neilson 2012). There are no known occurrences of the species in the Project area in Wyoming; however, the northeastern end of the Project area in Carbon County, Wyoming, lies within the known range of the Iowa darter in Wyoming (WGFD 2010a). The Iowa darter may occur in suitable aquatic habitats in the Project area.

Juniper Titmouse (*Baeolophus ridgwayi*) – State: Wyoming

The juniper titmouse is a year-round resident in western North America from southern Oregon west to Wyoming and south to Arizona, Sonora, and western Texas. Terrestrial habitats of this titmouse species include juniper woodlands, sagebrush, and other mixed shrub woodlands but require old-growth woodlands with open canopy and higher herbaceous ground cover. The juniper titmouse uses secondary cavities for nest, often using woodpecker holes or natural cavities (WGFD 2010a). The Project area is within the known range of the species and suitable habitat is known to occur near alternative routes in Utah, Wyoming, and Colorado. Ten occurrences of the juniper titmouse have been noted in the Project area along Links W492, W520, and W493 in southwestern Wyoming. The juniper titmouse is known to breed and forage in the Project area.

Kit Fox (*Vulpes macrotis*) – BLM: Colorado, Utah; State: Colorado, Utah

The kit fox is a desert adapted fox that is absent from high elevation montane regions. Populations are associated with sparsely vegetated arid habitat, primarily greasewood, shadscale, or sagebrush-dominated habitat (Bosworth 2003). They also are found adjacent to irrigated crop land and urban fringes, and may use manmade structures for denning. Kit fox are primarily carnivorous and have adapted to obtain water requirements directly from prey, but have to consume prey over and above energetic requirements to do so. In addition, kit fox den during the day and have nocturnal movement patterns to minimize water loss and reduce heat loads (Cypher 2003). Kit fox populations occupy habitats that provide favorable combinations of low predator numbers, sufficient prey, and soils suitable for denning (UDWR 2011a). Home range size varies according to sex, food availability, season, and geographic location. Population density fluctuates according to food availability as a consequence of climatic conditions, namely drought. Further limiting factors include predation by coyotes (the primary source of mortality for kit fox), collisions with vehicles, and accidental death through anthropogenic development (Cypher 2003). Increased availability of water in arid environments and introduction of invasive weeds are known to threaten kit fox populations by extending the distribution of competitors (coyotes) into kit fox habitat and altering the availability of prey species. Alternative routes are within the known range of the species in Colorado and Utah and contain suitable habitat. The kit fox is known to occur throughout desert shrub and sagebrush communities near alternative routes.

Land Snails (combined account) – State: Wyoming

Land snails are found throughout North America. Approximately 1,000 land snails and slugs inhabit most terrestrial habitats across North America. These species feed on plants, litter, wood, and dead animals (WGFD 2010a). There are no known occurrences of these species in the Project area; however, since these species are found in most terrestrial habitats, potentially suitable habitat is likely present in the Project area.

Lark Bunting (*Calamospiza melanocorys*) – State: Wyoming

The breeding range of the lark bunting extends from southern Alberta and Saskatchewan south to northeastern New Mexico and the Texas Panhandle. The wintering range extends from central Texas west to Baja California and south to central Mexico. The species inhabits grasslands and shrub-steppe of high plains including agricultural areas. Lark buntings feed on small seeds, grain, insects, and arachnids (Shane 2000). There are three known occurrences in the Project area and all are in Utah. The lark bunting is considered to be an abundant summer resident in Wyoming (WGFD 2010a). The lark bunting is likely to breed and forage in the Project area.

Least Chub (*Iotichthys phlegethontis*) – BLM: Utah; State: Utah

Regulatory Status

In June 2007, the least chub was petitioned for listing under the ESA based on threats to habitat including livestock grazing, mining (including peat mining and oil and gas leasing and exploration), urban development, and water withdrawal and diversion (73 FR 61007). FWS issued a 12-month finding on a petition to list the least chub in June of 2010; they found that listing of the least chub was warranted but precluded by higher priority actions (75 FR 35398). The least chub had been previously been listed as a candidate species but was removed from the candidate species list in August 2014 (79 FR 51042). Currently, only six known wild populations remain, but one of these is considered functionally extirpated. The species currently has a listing priority number of 7 (76 FR 66370-66439).

Taxonomy and Life History

The least chub is endemic to the Bonneville Basin of Utah. E.D. Cope first described the least chub from specimens collected by H.C. Yarrow and H.W. Henshaw from the Bear River in 1872 (60 FR 50518).

Adult least chubs can range from 0.2 to 2.5 inches and are identified by their upturned or oblique mouth as well as the absence of a lateral line. The least chub usually has eight dorsal fin rays and eight anal fin rays. Algae, midges, microcrustaceans, and algae are common diet items for the least chub.

Least chub begin spawning in the spring when water temperatures increase, releasing eggs over extended periods but only a few eggs at a time. Peak spawning occurs in May but the reproductive months are from April through August. The least chub's adhesive eggs are released over aquatic vegetation where they sink and attach. The fertilized eggs hatch and young larvae use that submerged vegetation as an oxygenated habitat with an abundance of food.

Distribution and Habitat Requirements

Once having a wide distribution in the Bonneville Basin of northwestern Utah, the least chub occupied streams, springs, and ponds and was quite common in its preferred habitats. Least chub have been observed in the Beaver River, Provo River, tributaries of the Great Salt Lake and Sevier Lake as well as Utah Lake, Parowan Creek, Clear Creek, Leland Harris Spring Complex, and the Gandy Salt Marsh Complex in the Snake Valley.

The species is now limited to the Snake Valley of the Bonneville Basin, occurring on a mixture of federal, state, and private lands at five locations. Small populations of least chub exist in Central Spring (Bishop Spring Complex in Millard County) and Miller Spring (Juab County), Leland Harris Spring Complex (Juab County) and Gandy Salt Marsh Complex (Millard County), and Snake Creek (60 FR 50518).

The least chub has historically occurred in a variety of habitat types but presently occupy springs, marshes and pools, and stream habitats. Springs exhibit cool stable temperatures, relatively low conductivity, and little variation in dissolved oxygen content. The marsh and pool environments exhibit extreme diurnal fluctuations in dissolved oxygen and water temperature that may vary. Seasonal water quality changes in marsh and stream segments tend to influence fish movement between different habitat types. Plentiful aquatic vegetation along with muddy substrates is also an important habitat character for the least chub (Christ 1990).

Primary Threats to Survival

Habitat loss and degradation are one of the major causes of the least chub's decline. Reports of livestock trampling and grazing have been linked to fish habitat degradation in streams and springs (Christ 1990). Predation by nonnative fish is another known factor contributing to native desert fish declines in southwestern North America (Minckley et al. 1991). Spring complex surveys indicate areas with nonnative fish introductions maintain few if any least chub populations. In addition to introductions of game fish, as least chub predators (largemouth bass, rainbow trout, common carp, and brook trout), other nonnative fish with similar diets are considered potential competitors (mosquitofish and rainwater killifish).

Occurrence in the Project Area

UDWR studies in 1990s and 2000s have monitored a least chub population in Burraston Ponds near Mona, approximately 1 mile from Links U640 and U650. This is the only known population in the vicinity of the Project area.

Lesser Scaup (*Aythya affinis*) – State: Wyoming

The breeding range of the lesser scaup extends from northern Alaska to Quebec and as far south as southern Wyoming. The wintering range covers the southern United States south to Honduras and along both coasts of the continental United States and portions of central United States including Colorado. Lesser scaups often inhabit fresh to moderately brackish, seasonal and semi-permanent wetlands and lakes with emergent vegetation such as bulrush (*Scirpus* spp.), cattail (*Typha* spp.), and river bulrush (*Scirpus fluviatilis*). This duck dives to feed on aquatic invertebrates such as insects, crustaceans, and mollusks; however, the species also may eat seeds and vegetative portions of aquatic plants (Austin et al. 1998). The lesser scaup is known to migrate through the Project area and is likely to breed, forage, and nest in aquatic habitats in the Project area.

Lewis's Woodpecker (*Melanerpes lewis*) – BLM: Utah; State: Wyoming, Utah

The breeding distribution of Lewis's woodpecker is associated with the distribution of ponderosa pine, although the species is also known to use riparian and mountain shrub habitats. It is an open country bird, found most often where trees are scattered on woodland edges, streamside trees, and recently burned forests with a good under-story of grasses and shrubs to support insect prey populations. Nests are excavated in trunks or large branches of large, dead, or decaying trees, including burned trees (Tobalske 1997). The Project area is within the known range of the Lewis's woodpecker and the species is known to breed and forage in the vicinity of the Project area in Colorado, Utah, and Wyoming (Cerovski et al. 2004; Tobalske 1997). There are three known occurrences of the Lewis's woodpecker in the Project area. One is where Link U402 crosses the Green River. The remaining two occurrences are near the junction of Nebo Creek and Spencer Canyon along Link U625 between Uinta and Manti-La Sal National Forests.

Little Brown Myotis (*Myotis lucifigus*) – State: Wyoming

This small bat is abundant in forested areas. In the west, it is found primarily in higher elevations and riparian areas in forest habitats (Bat Conservation International 2009b; Bradley et al. 2006). Little brown myotis hibernates in caves, abandoned mines, and tunnels in the east; however, winter roosts in the west are not known. Day roosts include hollow trees, rock outcrops, caves, mines and buildings (Bradley et al. 2006). One of North America's most wide-ranging bats, the little brown myotis occurs from Alaska, across Canada to the Atlantic, across much of the United States, and down to central Mexico (Tuttle 2006). There are no known occurrences of little brown myotis in or near the Project area; however, the entire Project lies within the range of the species.

Loggerhead Shrike (*Lanius ludovicianus*) – BLM: Wyoming

The loggerhead shrike is a predatory passerine bird that hunts from perches and impales its prey on thorns and barbed wire fences. The species has a wide distribution and can be found throughout the United States. Habitat is open country with short vegetation, particularly pastures with fence lines (Yosef 1994), old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 1996). Shrikes nest in a variety of trees and shrubs, where the degree of cover is the most significant determinant. The loggerhead shrike often nests in trees with thorns (e.g., Russian olive or honey locust, *Gleditsia triacanthas*), possibly to provide increased protection (Porter et al. 1975). The loggerhead shrike breeds throughout the Project area and is a year-round resident of much of the Project area in Colorado and Utah (Yosef 1996). There are several known occurrences of the loggerhead shrike near alternative routes.

Long-billed Curlew (*Numenius americanus*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Colorado, Utah

The long-billed curlew is the largest North American shorebird, and a neotropical migrant. It is endemic to the Great Plains and winters in coastal/inland areas of the southern United States and Central America. It nests primarily in short-grass or mixed prairie habitat with flat to rolling topography but moves to taller grasses when brood rearing. It lives and breeds in higher and drier meadowlands than most other shorebird species (Parrish et al. 2002). The species commonly nests in cheatgrass (*Bromus tectorum*) dominated landscapes (Pampush and Anthony 1993) and agricultural fields in the Great Basin. The species is considered to be an uncommon summer resident in Wyoming (WGFD 2010a). The Project area is within the species' breeding range in Wyoming, Colorado, and Utah. The long-billed curlew has been observed near alternative routes near Hogback Lake southwest of Rawlins, Wyoming; along the Yampa River near Craig, Colorado; and in Duchesne and Juab counties, Utah. The long billed curlew is known to breed and forage in the Project area.

Long-eared Myotis (*Myotis evotis*) – BLM: Wyoming; State: Wyoming

The long-eared myotis is primarily associated with high elevation forest, but also has been found in other habitats ranging from lowland riparian and sagebrush to montane forest habitats. The species primarily roosts during the day in hollow trees; under exfoliating bark; crevices in small rock outcrops; and occasionally in mines, caves, and buildings. Night roosts are caves, mines, and bridges. Long-eared myotis are believed to be non-migratory and hibernate during the colder months (Bradley et al. 2006). The species is widely distributed throughout the Project area. Alternative routes are within the range of the species and contain suitable habitat. The long-eared myotis is likely to forage throughout the Project area.

Long-legged Myotis (*Myotis volans*) – State: Wyoming

Habitat for the long-legged myotis includes pinyon-juniper and Joshua tree woodland, montane coniferous forest, blackbrush, and sagebrush (Bradley et al. 2006). This bat hibernates in winter but is capable of winter activity. Hibernacula are most likely mines or caves, while day roosts may be hollow trees, rock crevices, caves, mines, or buildings. Foraging is in open areas, with moths being the primary food source (Bradley et al. 2006). The majority of nursery colonies are found in trees of sufficient age (100 years or more) to provide crevices and exfoliating bark (Bat Conservation International 2009c). The long-legged myotis is one of the most widely distributed bats of the western United States (Bat Conservation International 2009c). There are no known occurrences of long-legged myotis in or near the Project area; however, the entire Project area lies within the range of the species. Long-legged myotis are likely to forage near alternative routes.

Long-nosed Leopard Lizard (*Gambelia wislizenii*) – BLM: Colorado; State: Colorado

The long-nosed leopard lizard inhabits flat to gently sloping shrublands with scattered shrubs and other low plants. It is known to occur in Colorado and Utah. It is an uncommon species in Colorado, restricted to the west-central and southwest edge of the state (CPW 2010). The species is widespread and common in Utah. The southern portion of the Project area in Colorado and Utah is within the known range and distribution of the species and contains habitat for the long-nosed leopard lizard. The long-nosed leopard lizard is known to occur in the Project area.

McCown's Longspur (*Calcarius mccownii*) – State: Wyoming

The McCown's longspur breeds from southern Alberta and Saskatchewan south to northern Colorado and western Nebraska. Its winter range is primarily in western Texas extending through very southern New Mexico south to northern Durango, Mexico. During both breeding and wintering seasons, the species inhabits open habitat with sparse vegetation such as shortgrass prairie, and semi-arid shortgrass steppe. These birds feed on the seeds of grasses and forbs, insects such as grasshoppers, moths, and beetles, and other arthropods (With 2010). There are no known occurrences of McCown's longspur in the Project area. The Project area is on the boundary of the species' range in Wyoming. The McCown's Longspur may occur in suitable habitats in the Project area in Wyoming.

Merlin (*Falco columbarius*) – State: Wyoming

The merlin is a raptor that occurs in Eurasia and North America from the northern tree limit in North America south to Washington, Oregon, Montana, Idaho, Wyoming, and the western border of North and South Dakota. In North America, the merlin winters from British Columbia and the western and southern United States south to Venezuela and Peru. Open woodlands, savannah, grasslands, and shrub-steppe below 8,500 feet (2,600 meters) are typical merlin habitat. Merlin typically nest in large ponderosa pines, in old domed magpie nests, and near open sagebrush-grassland for foraging. Nesting sites seem to be selected based on easy access, high vantage of the surrounding area, and maximum nest concealment (WGFD 2010a). Three relatively recent merlin occurrences (1983 to 2007) have been noted in the Project area along Muddy Creek (Link W111), east of Hogback Lake, and along North Platte River (Link W30) (WYNDD 2011). The merlin is likely to breed and forage in the Project area.

Milk Snake (*Lampropeltis triangulum taylori*) – BLM: Colorado

The milk snake occurs in rocky thornscrub desert valleys, up through desert grasslands, into sagebrush desert, desert grassland, and open grassland in burrows of small mammals. Much of the Project area is within the known range of the milk snake. There are numerous know occurrences of the species in the Project area throughout Utah.

Moose (*Alces alces*) – State: Wyoming

In Wyoming, moose are considered common as they occupy a variety of habitats including Engelmann spruce, Douglas and subalpine fir, and lodgepole pine forests along riparian communities where willows and shrubs are available as food resources. Moose tend to summer in higher elevation conifer forests and winter in willow and deciduous habitats. A portion of the Project area lies in the predicted moose range of southwestern Wyoming and northeastern Utah (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area. Refer to Section 3.2.7.4 for more detailed information about moose in the Project area.

Mountain Plover (*Charadrius montanus*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Colorado, Utah

The mountain plover was formerly a candidate to be listed as threatened under the ESA. On September 9, 2003, the FWS withdrew the listing because newly acquired information indicated the threats to the species originally included in the proposal were not as significant as earlier believed (68 FR 53803). The mountain plover is associated with shortgrass prairie landscapes where the topography is fairly flat and the vegetation is sparse (Beidleman 2000), composed primarily of blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloe dactyloides*) (Parrish et al. 2002). Mountain plovers often breed near areas of excessive disturbance (Knopf and Miller 1994) and prairie dog colonies (Knowles and Stoner 1982). Mountain plovers migrate from their wintering grounds in the Central Valley of California and Mexico to breeding grounds in mid-March. Mountain plovers leave breeding grounds in August. Habitats used during wintering periods include plowed fields, heavily grazed annual grasslands, and burned fields (Knopf and Rupert 1995). In Wyoming, mountain plovers have been documented in every county and are known to breed in the Project area. In Colorado, populations are concentrated in and around the Pawnee and Comanche National Grasslands and in South Park, all outside of the Project area. The breeding population in Utah (Duchesne and Uintah counties) is in the Project area but has not been detected since 2002 and may have been extirpated (Bosworth 2003).

Mountain Sucker (*Catostomus platyrhynchus*) – BLM: Colorado; State: Colorado

The mountain sucker occurs throughout large portions of the western United States and Canada in smaller rivers and streams with a substrate of gravel, sand, and mud. It is typically found near undercut banks, eddies, small pools, and areas of moderate current. The Project area is within the southern portions of the species' range. Current known distribution includes the upper reaches of the White, Yampa, Green, and Colorado river basins (Belica et al. 2006; CPW 2010). The mountain sucker is known to occupy streams and rivers in the Project area.

Mountain Whitefish (*Prosopium williamsoni*) – State: Wyoming

The mountain whitefish occurs in the Mackenzie River drainage and the Northwest Territories in Canada; south through western Canada and northwestern United States in the Pacific, Hudson Bay, and upper Missouri River basins; to Truckee River drainage, Nevada; and as far southeast as Colorado and the Sevier River drainage in Utah. In riverine habitats, whitefish occur in creek; high-gradient medium river, pool, and riffle; and in lacustrine habitats in deep and shallow water. They also are found in cold mountain lakes and fast, clear or silty streams with large pools; and streams with gravel riffles for spawning (NatureServe 2011). Two mountain whitefish occurrences have been noted in the Yampa River between the Project area and Hayden, Colorado. The mountain whitefish is known to occur in the Project area.

North American Wolverine (*Gulo gulo luscus*) – State: Wyoming, Colorado; USFS: Ashley National Forest

Regulatory Status

The North American wolverine was originally submitted as a candidate species on January 6, 1989. The species was considered warranted for listing, but was precluded as of November 21, 2012 due to other higher priority listings. On August 13, 2014 the FWS withdrew a proposal to list the North American wolverine as threatened species. There are currently no critical habitat rules available for this species, but two conservation plans do address this species (the Cedar River Watershed Habitat Conservation Plan and West Fork Timber Habitat Conservation Plan).

Taxonomy and Life History

The wolverine belongs to the family Mustelidae; adult males weigh 12 to 18 kilograms (kg) and adult females weighing 8 to 12 kg (FWS 2015). Wolverines have round, broad heads; short, rounded ears; and small eyes; five toes on each foot with curved claws optimal for digging and climbing (FWS 2015). In appearance the wolverine resembles a small bear.

Distribution and Habitat Requirements

Wolverines require a lot of space, traveling long distances over rough terrain and deep snow, likely due to availability and distribution of food (FWS 2015). This leads to large home ranges that vary greatly (from less than 100 square kilometers to over 900 square kilometers) depending on availability of food, gender, age, and differences in habitat (FWS 2015). Wolverine body size is small relative to their home range, suggesting that their niche is relatively unproductive and requires foraging over large areas to meet their caloric needs (FWS 2015).

Wolverines prefer near-arctic conditions with deep persistent snow cover for denning; restricting them to high-elevation areas in the West. Year-round, they remain in areas that maintain deep snow into spring and cool temperatures throughout summer. Small and semi-isolated subpopulations exist in the contiguous United States. Dispersers from these isolated subpopulations maintain genetic enrichment in the larger metapopulation.

Primary Threats to Survival

The primary threat to the North American wolverine is climate warming-related range and habitat loss. Wolverines depend on deep persistent snow cover for denning. Climate change will decrease wolverine range, further isolating subpopulations. Climate change is predicted to reduce wolverine habitat and range by 23 percent over the next 30 years and 63 percent over the next 75 years. The FWS predicts that by 2045, maintaining genetic diversity of the contiguous U.S. wolverine population in the currently occupied area will likely require human intervention to move individual dispersers between habitat patches. Other threats (harvest, inadequate regulatory mechanisms to protect against human recreational disturbance, infrastructure developments, and transportation corridors; and demographic stochasticity and loss of genetic diversity due to small effective population sizes), in conjunction with climate change, could significantly suppress an already stressed population.

Occurrence in the Project Area

Wolverines have the potential to occur in alpine areas at high elevations. The Project does not cross any areas known or likely to be occupied by wolverines, but dispersing wolverines could use intermountain valleys crossed by the Project. Wolverines in Wyoming are part of the northern Rocky Mountain population (FWS 2013). In Colorado and Utah, wolverines are believed to have been extirpated since the early 1900s (FWS 2013). One male wolverine was detected moving from the southern Greater Yellowstone area of Wyoming into the southern Rocky Mountains of Colorado, but there is no evidence that a wolverine population currently exists in Colorado (FWS 2013). In Utah, a wolverine was detected at a bait station on the north slope of the Uinta Mountains in 2014, although it is not known whether wolverines are residents or temporarily dispersing into Utah (UDWR 2014).

Northern Flying Squirrel (*Glaucomys sabrinus*) – State: Wyoming

The northern flying squirrel distribution ranges from Alaska through most of Canada, southward to the mountains of southern California, the southern Rocky Mountains, western South Dakota, the Great Lakes region, and the southern Appalachians. The species is considered uncommon in Wyoming as it is limited to western mountain ranges and isolated populations in the Black Hills and Sweetwater County in the state. The species prefers coniferous, deciduous, mixed, and riparian forests and woodlands. The northern flying squirrel often inhabits areas with sands of varying age, understory density, and composition; however, old-growth forests near wetlands or streams are ideal for its gliding form of locomotion, cavity nesting, and use of wood fungi and lichens for food. A portion of the Project area lies on the extreme edge of the predicted northern flying squirrel range in southwestern Wyoming and central to northeastern Utah (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

Northern Goshawk (*Accipter gentilis*) – BLM: Wyoming, Colorado, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Utah

The northern goshawk is a large forest-dwelling raptor that inhabits old-growth forests in mountains and riparian zone habitats with a dense canopy (Daw and DeStefano 2001). Nests are typically in the largest trees, constructed of sticks just below the forest canopy (Speiser and Bosakowski 1987), and often occur in dead trees at elevations as low as 5,700 feet in Utah (Rodriguez 2012). The goshawk is partially migratory in the northern portion of its range where, in winters of food shortage, it migrates southward. In the Project area, the northern goshawk is found year-round in Wyoming and Utah. In Utah, it is an uncommon permanent resident found throughout the state in proper habitat, including montane conifer-aspen forests to the treeline (UDWR 1998). In Wyoming, it is found in both Sweetwater and Carbon counties in primarily coniferous forests, especially Douglas fir and lodgepole pine and aspen (Cerovski et al. 2004). All three national forests crossed by the Project contain suitable habitat for the species. Northern goshawk is managed as a MIS in all three forests.

Northern Leatherside Chub (*Lepidomeda copei*) – BLM: Wyoming, Utah; State: Wyoming

The northern leatherside chub is one of two taxa formerly known as leatherside chub that was recently split into two species based on genetic differences (WGFD 2010a). The northern leatherside chub occurs in streams and rivers of the northeastern Bonneville Basin in Utah, Wyoming, and Idaho. The species is not native to the Project area but introduced populations have been observed in the Colorado and Green River systems (UDWR 2009c). The species spawns over cobble and gravel substrate in the spring and is threatened by habitat loss and fragmentation and competition, hybridization, and predation by other fish. Populations of northern leatherside chub have been declining (WGFD 2010a). Alternative routes are outside of the native range of the northern leatherside chub but introduced populations occur in the Project area.

Northern Leopard Frog (*Rana pipiens*) – BLM: Wyoming, Colorado; State: Wyoming, Colorado

The northern leopard frog occurs in wet meadows and the banks and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches. In Wyoming, it inhabits the plains, foothills, and montane zones up to 8,500 feet (2,600 meters) (WGFD 2010a). In Colorado, the species occurs statewide in the mountains and lowlands (CPW 2010). Populations are known to be declining throughout the species range (WGFD 2010a). The Project area is within the known range of the species and suitable habitats are present in Wyoming, Colorado, and Utah. There are numerous know occurrences of the species in the Project area throughout all three states. In Utah, centerlines cross known occurrences in Ashley Creek where it is crossed by Link U320, in Willow Creek south of Ouray where it is crossed by Link U400, and in the Green River where it is crossed by Link U490.

Northern Pintail (*Anas acuta*) – State: Wyoming

The northern pintail is found throughout most of North America from northern Alaska to Costa Rica. This duck typically nests in open country with shallow, seasonal, or intermittent wetlands and low vegetation. Outside of breeding season, the species can be found in most types of aquatic habitat. The species feeds on grains, moist-soil and aquatic plant seeds, pond weeds, aquatic insects, crustaceans, and snails (Austin and Miller 1995). There are no known occurrences in the Project area; however, the entire project is within the known range of the northern pintail.

Northern Plains Killifish (*Fundulus kansae*) – State: Wyoming

The northern plains killifish inhabits riverine systems in the Great Plains region of North America (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Northern Tree Lizard (*Urosaurus ornatus wrighti*) – State: Wyoming

Distribution data for the northern tree lizard are not complete for the United States and Canadian providences (NatureServe 2012). The northern tree lizard occurs in southwestern Sweetwater County, in Wyoming where it is considered extremely rare. The species inhabits rocky cliffs, canyon walls, steep exposures of bedrock, and large boulders in sagebrush and juniper habitats. The northern tree lizard predates spiders and insects when active while basking in the sun most of the day, and perching in shaded areas in the hottest parts of the afternoon. A portion of the Project area lies within the range of the northern tree lizard in southwestern Wyoming (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

Olive-backed Pocket Mouse (*Perognathus fasciatus*) – State: Wyoming

Distribution of the olive-backed pocket mouse includes the northern Great Plains and Intermountain basins, from southern Alberta, Saskatchewan, and Manitoba south to northeastern Utah, southern Colorado, and eastern South Dakota. A variety of arid and semiarid upland habitats, typically sparsely vegetated grasslands and sagebrush-grasslands, are habitat for the olive-backed pocket mouse. This pocket mouse species occupies loose sandy to clay soils for burrowing (WGFD 2010a). The Project area is within the known range of the species and several occurrences of the olive-backed pocket mouse have been noted in the Project area. The olive-backed pocket mouse is likely to occur in suitable habitats throughout the Project area.

Oreohelix Mountain Snails (combined account) – State: Wyoming

Oreohelix mountain snails are land snails that live in the mountains in areas with canopy cover and leaf or needle litter. These snails are found in western North America from Saskatchewan and British Columbia to Mexico and California to South Dakota. Mountain snails feed on leaf litter, detritus, and microorganisms on solid surfaces (WGFD 2010a). There are no known occurrences of these species in the Project area; however, potentially suitable habitat may be present in the Project area.

Pale Milksnake (*Lampropeltis triangulum multistriata*) – State: Wyoming

Milksnakes are found in eastern and Midwestern North America, throughout Central America, and into northwest South America. The pale milksnake is the northernmost subspecies and is found in Montana, Wyoming, Colorado, Nebraska, and South Dakota west of the Missouri River to the Rocky Mountains. Milksnakes inhabit a wide variety of habitat types, but are primarily found in areas with a diverse grass-forb mixture with lower populations where woody vegetation dominated. Milksnakes feed on small vertebrates and eggs and kill by constricting their prey. The species is believed to be nocturnal (Smith and Stephens 2003). There are no known occurrences of pale milksnakes in the Project area; however, the northeastern end of the Project area lies within the known range of this subspecies (WGFD 2010a).

Pallid Bat (*Antrozous pallidus*) – State: Wyoming

Habitat for the pallid bat includes low desert, brushy terrain, coniferous forest and deciduous woodland. The species is found between 1,380 to 8,465 feet elevation in pinyon-juniper woodland, salt desert scrub, creosote, and sagebrush habitats (Bradley et al. 2006). The pallid bat hibernates in winter, but arouses periodically to forage and drink. Day roosts include rock outcrops, mines, caves, hollow trees, buildings, and bridges. Unlike most other North American bats that capture prey in flight, the pallid bat primarily captures large ground-dwelling prey such as scorpions, centipedes, long-horned beetles, grasshoppers, and Jerusalem crickets (Bat Conservation International 2009d; Bradley et al. 2006). There are no known occurrences of pallid bats in or near the Project area; however, the entire Project area lies within the range of the species. The pallid bat is likely to forage in the Project area.

Peregrine Falcon (*Falco peregrinus anatum*) – BLM: Wyoming, Colorado; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Colorado

The peregrine falcon was listed as an endangered species in 1970 under the Endangered Species Conservation Act of 1969 but after a successful recovery due to restrictions on the use of organochlorine pesticides, the species was delisted in 1999 (FWS 1999b) (64 FR 46543). The peregrine falcon is a widely distributed bird, occurring from the tundra to the tropics in a variety of different terrestrial biomes. The species most commonly occupies cliff habitats with open landscapes for foraging in proximity to water (coasts, lakes, rivers, etc.), but also occurs in artificial habitats such as towers, buildings, and urban settings (White et al. 2002). The species feeds on other birds and is known to breed, forage, and migrate throughout the Project area.

Pill Clams (combined account) – State: Wyoming

Pill clams are mollusks found in almost all Wyoming waters. These clams inhabit fine substrates in cold to warm water that ranges from flowing to stagnant and even temporary. They can be found at elevations from lowlands to more than 9,600 feet (2,900 meters) (WGFD 2010a). There are no known occurrences of the species in the Project area; however, given the omnipresence of these clams in Wyoming, potentially suitable habitat is likely present in the Project area.

Pinyon Mouse (*Peromyscus truei*) – State: Wyoming

The pinyon mouse distribution ranges from central Oregon, east to eastern Colorado and the panhandle of Texas, and south to southern Mexico. The pinyon mouse is considered rare in Wyoming as it likely limited to suitable habitat along Flaming Gorge Reservoir and isolated mesas of southern Sweetwater County, Wyoming. The species occurs in stands of juniper grasslands and shrub-steppe where vegetation is not dense, often nesting in hollow junipers or rock crevices on rocky slopes. A portion of the Project area lies in the predicted pinyon mouse range in southwestern Wyoming, northwestern Colorado, and northeastern Utah (WGFD 2010a). The species is likely to breed and forage in suitable habitat in the Project area.

Plain Pocketbook (*Lampsilis cardium*) – State: Wyoming

The plain pocketbook inhabits river drainages including the Mississippi River drainage, St. Lawrence River, and Great Lakes region in the United States (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Plains Black-headed Snake (*Tantilla nigriceps*) – State: Wyoming

The Plains black-headed snake is found from southeastern Wyoming to central Durango, Mexico, and from Arizona to east-central Texas. The species inhabits plains and desert grassland, shrubland, and woodlands where it feed on invertebrates (Stebbins 2003). There are no known occurrences of the Plains black-headed snake in the Project area and the species was only recently discovered in Wyoming (WGFD 2010a). Portions of the Project area cross the potential range of the species in Wyoming (WGFD 2010a). The Plains black-headed snake may occur in the Project area.

Plains Orangethroat Darter (*Etheostoma spectabile*) – State: Wyoming, Colorado

The Plains orangethroat darter inhabits riverine systems from central Texas to southern Wisconsin and Michigan with a western extent to eastern Wyoming. The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Plains Topminnow (*Fundulus sciadicus*) – State: Wyoming

The Plains topminnow inhabits river systems in Nebraska, South Dakota, and eastern Wyoming and Colorado (Rahel and Thel 2004). The species is not found in the Project area but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Pond Snails (combined account) – State: Wyoming

Pond snails (genus *Stagnicola*) are air-breathing freshwater snails found throughout northern North America. These snails feed on algae, microbes, fungi, and detritus on surfaces such as logs macrophytes, rocks, and other substrates. Pond snails inhabit ponds or slow-moving streams (WGFD 2010a). There are no known occurrences of these species in the Project area; however, potentially suitable habitat may be present in the Project area.

Pygmy Nuthatch (*Sitta pygmaea*) – State: Wyoming

The pygmy nuthatch occurs in disjunct populations found throughout western North America. The pygmy nuthatch inhabits ponderosa and similar pine habitats, which results in the patchy distribution of these birds. The species primarily feeds on insects such as beetles, wasps, ants, true bugs, and caterpillars (Kingery and Ghalambor 2001). There are no known occurrences of pygmy nuthatch in the Project area; however, the Project area is within the known range of the species and the pygmy nuthatch may be present where suitable habitat is located.

Pygmy Rabbit (*Brachylagus idahoensis*) – BLM: Wyoming, Utah; State: Wyoming, Utah

The pygmy rabbit is patchily distributed throughout the Great Basin and adjacent Intermountain areas including Utah, Wyoming, and Colorado. The species is restricted to areas having dense, tall stands of sagebrush and soil characteristics conducive to burrowing. The FWS has reviewed a petition to list the species range-wide, but found that listing of the pygmy rabbit was not warranted (75 FR 60516-60561). Pygmy rabbits are dependent on sagebrush, which composes up to 99 percent of its winter diet (WGFD 2010a). Because of this dependence, pygmy rabbits are susceptible to fragmentation and degradation of sagebrush habitats due to fire, agriculture, development, grazing, and other human land uses (UDWR 2011a). Alternative routes are within the known range of the species and contain suitable habitat. In Wyoming, the species is likely to occur in the Project area in Carbon and Sweetwater counties. Pygmy rabbits have recently been identified in Moffat County in Colorado and may exist in sagebrush habitats crossed by the Project in other counties in the state as well (Estes-Zumpf and Rachlow 2009). Pygmy rabbits are not known to inhabit the Project area in Utah (Bosworth 2003).

Redhead (*Aythya americana*) – State: Wyoming

The redhead is found throughout most of the United States and Mexico as well as portions of Canada and Alaska. This duck inhabits almost any type of wetland from small, seasonal wetlands to larger semi-permanent wetlands. Redheads feed on vegetative parts and tubers of submerged aquatic plants, muskgrass (*Chara* spp.), and aquatic invertebrates (Woodin and Michot 2002). The Project is in the species' range and redheads are likely to occur throughout the Project area where wetlands are present.

Ringed Crayfish (*Orconectes neglectus*) – State: Wyoming

The ringed crayfish inhabits river drainages from Nebraska to Oklahoma and Missouri to Wyoming (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

River Otter (*Lontra canadensis*) – State: Wyoming, Colorado

The river otter occurs throughout the United States and Canada. The species is primarily present in states bordering the Great Lakes, Atlantic Ocean and the Gulf of Mexico, and the forested regions of the Pacific coast in North America. Bog lakes with banked shores containing semi-aquatic mammal burrows and lakes with beaver lodges are typical river otter habitat. The otter usually avoids water systems with gradually sloping shorelines of sand or gravel, residing more commonly in lakes, streams, and aquatic areas in cottonwood riparian, riparian shrub, willow, and marsh-swamp land habitat. The river otter occurs in river systems crossed by or near the Project area including the Green, North Platte, Yampa, and Colorado river systems (Boyle 2006) The species appears to be recolonizing its former range in Wyoming (WGFD 2010a). River otter occurrences have also been noted near Flaming Gorge in the Project area.

Rocky Mountain Bighorn Sheep (*Ovis canadensis canadensis*) – USFS: Ashley and Uinta National Forests; State: Wyoming

The Rocky Mountain bighorn sheep distribution ranges from southwestern Canada, south through the Rocky Mountains, Sierra Nevada, and desert mountains of the southwestern United States to Baja California and the northwestern mainland of Mexico. A portion of the Project area lies in the range of the Rocky Mountain bighorn sheep in west central Wyoming (Beecham et al. 2007). The species is likely to breed and forage in suitable habitat in the Project area. Refer to Section 3.2.7.4 for more detailed information about Rocky Mountain bighorn sheep in the Project area.

Roundtail Chub (*Gila robusta*) – BLM: Wyoming, Colorado, Utah; State: Wyoming, Colorado, Utah

The roundtail chub is endemic to rivers and streams in the Colorado River drainage (Bosworth 2003). The species is threatened by fragmentation and loss of habitat and competition and predation by nonnative species. Roundtail chub currently occupy 45 percent of their historic range in the Colorado River Basin (WGFD 2010a). Current known distribution of the roundtail chub includes the Little Snake (Carbon County) and Green (Sweetwater County) River drainages in Wyoming (WGFD 2005c), the Little Snake and Green (Moffat County) and Colorado (Mesa County) River drainages in Colorado; and the Colorado River Drainage including the Colorado (Grand County), Green (Uintah, Emery, and Grand counties), and San Rafael (Emery County) rivers in Utah (UDWR 1998). Alternative routes are in or cross the known range of the roundtail chub in Wyoming, Colorado, and Utah. The species is likely to be present in the Project area. One known occurrence is crossed by Link U400 where it crosses the White River.

Sage Sparrow (*Amphispiza belli*) – BLM: Wyoming; State: Wyoming

The sage sparrow prefers semi-open habitats with evenly spaced shrubs that are less than 6.5 feet high (Martin and Carlson 1998). The sage sparrow is typically considered a big sagebrush (*Artemisia tridentata*) obligate inhabiting pure stands as well as stands interspersed with bitterbrush, saltbush, shadscale, rabbitbrush, or greasewood. It is rarely found in mixed sagebrush-juniper (*Juniperus* spp.) except where it is adjacent to shrub-steppe habitat (Martin and Carlson 1998). Evidence suggests sage sparrows abandon cheatgrass-dominated areas and areas where sagebrush has been removed (Martin and Carlson 1998). The sage sparrow is found throughout the Project area during the breeding season (Beason et al. 2008; Beason et al. 2005; Cerovski et al. 2004). The species is considered a common summer resident in Wyoming (WGFD 2010a). The species winters between central California, east to central New Mexico, and south to northwestern Mexico (WGFD 2010a). It is an uncommon permanent resident statewide and a common winter resident in southern Utah (Parrish et al. 2002). There are numerous known occurrences of the sage sparrow in the Project area in all three states and the species is known to breed and forage in the Project area.

Sage Thrasher (*Oreoscoptes montanus*) – BLM: Wyoming; State: Wyoming

The sage thrasher is a sagebrush obligate (Baker et al. 1976); however, the species is also noted to occur in black greasewood (*Sarcobatus vermiculatus*) and bitterbrush (*Purshia tridentata*) habitats (Reynolds et al. 1999). The sage thrasher is found throughout Wyoming, Colorado, and Utah in appropriate habitat during the breeding season (Cerovski et al. 2001). The species winters from central California, east to central Texas and south to central Mexico. The entire Project area lies in the breeding range of the species and suitable habitat is present. The species has been observed near alternative routes in Wyoming, particularly along Link W108. The sage thrasher is known to breed and forage in the Project area.

Short-eared Owl (*Asio flammeus*) – BLM: Utah; State: Wyoming, Utah

Short-eared owls can be found in all open environments in North America, especially in lowland areas where there is a higher density of low vegetation and rodents. They occur in native grasslands, extensive grassy areas of broad lowland floodplains, marshes and wet hummocks, and agricultural areas. The species also frequent areas intermixed with brush and woodland, provided there is ample open grassland to hunt. Short-eared owls tend to be found in the densest stands of grass (Glinski 1998). They nest on the ground, sometimes in small colonies (Terres 1980). Short-eared owls eat mainly rodents, especially meadow mice, but also shrews, cotton rats, rabbits, pocket gophers, and bats. They also eat insects such as grasshoppers, June beetles, and cutworms in addition to small birds. The Project area is in the known range of these species and suitable breeding and foraging habitats are present. The short-eared owl is likely to breed and forage near alternative routes in Wyoming, Colorado, and Utah.

Smooth Greensnake (*Opheodrys vernalis*) – State: Wyoming, Utah

The smooth greensnake inhabits prairies, meadows, marshes, stream edges, and grassy upland areas. The species is rarely seen far from riparian areas (WGFD 2010a). In Utah, the smooth greensnake occurs in scattered localities in the mountains of central and eastern Utah (Bosworth 2003). The Project area is in the known range of the smooth greensnake in Colorado, Utah, and Wyoming (Redder et al. 2006). Populations of the species in the Project area are geographically isolated from larger populations in the eastern United States (Redder et al. 2006). Suitable habitat for the smooth greensnake occurs in the Project area in Utah and Colorado, and the species has been observed in the Red Narrows along Link U460 between the Uinta and Manti-La Sal National Forests. The smooth greensnake is known to occur in the Project area.

Snowy Egret (*Egretta thula*) – State: Wyoming

The snowy egret is primarily found along the coastal regions of the United States and throughout Mexico. However, there is an area of suitable breeding habitat found in northern Nevada and Utah into southwestern Wyoming and a disjunct area in southeast Wyoming. In these interior areas, the species tends to inhabit willows along large rivers, reservoirs, grassy marshes, and wet meadows. The species primarily feeds on invertebrates, but will also feed on fish, frogs, toads, snakes, and lizards (Parsons and Master 2000). No known occurrences of snowy egret are in the Project area; however, the species may be found breeding or foraging along waterways in the northern portion of the Project.

Southern Bonneville Springsnail (*Pyrgulopsis transversa*) – State: Utah

The southern Bonneville springsnail is a Utah endemic that is known to currently occur in six freshwater springs in central Utah, including four localities in Tooele County and one each in Utah County and Sanpete County. The species is found in aquatic habitats produced by springs in a wide elevation range from 5,830 to 6,740 feet (UDWR 2011a). One known Southern Bonneville springsnail population exists in the Project area in Thistle Creek along U.S. Highway 89 south of Thistle, Utah (Link U625).

Southern Leatherside Chub (*Lepidomeda aliciae*) – BLM: Utah; USFS: Manti-La Sal and Uinta National Forests; State: Utah

The southern leatherside chub in one of two taxa formerly known as leatherside chub that was recently split into two species based on genetic differences (Johnson et al. 2004). The southern leatherside chub is a small minnow native to streams and rivers of the southeastern portion of the Bonneville Basin. Observations of introduced leatherside chub populations have been found in the Strawberry, Green, and Freemont rivers in the Upper Colorado River Basin (UDWR 2010b). In Utah, the current known distribution includes Utah Lake and the Sevier River drainage (UDWR 2010b). Alternative routes are in the known range of the southern leatherside chub in Utah and contain suitable habitat. The species is known to occur in the Project area.

Spotted Bat (*Euderma maculatum*) – BLM: Wyoming, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Utah

The spotted bat roosts in crevices on cliff walls and forages in open grassland, desert shrub, sagebrush, and mountain meadow communities (Bosworth 2003). The habitat is patchy and depends on the availability of cliff roosting habitat. It does not appear to migrate, but hibernates locally during winters (Bradley et al. 2006). The spotted bat is widely distributed throughout the Project area. The Project area is in the range of the species and contains suitable habitat; the spotted bat is likely to forage near alternative routes in Wyoming, Colorado, and Utah. All three national forests contain suitable habitat for the species.

Stonecat (*Noturus flavus*) – State: Colorado

The stonecat inhabits riverine systems throughout much of the northern United States from Montana and Wyoming east to Vermont (Florida Museum of Natural History 2012). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Suckermouth Minnow (*Phenacobius mirabilis*) – State: Wyoming, Colorado

The suckermouth minnow inhabits river drainages throughout the Mississippi River Basin from Ohio to Wyoming in isolated populations also present in the Gulf Coast drainage (WGFD 2010a). The species is not found in the Project area, but inhabits the Platte River system that may be affected from drawdown of water from the Platte River watershed as a result of project-related water usage.

Swainson’s Hawk (*Buteo swainsoni*) – State: Wyoming

Swainson’s hawk is widely distributed in the summer in the western United States. It is generally found in savannas, prairies, deserts, open pine-oak woodlands, and agricultural areas (Ehrlich et al. 1988). Grass-lined nests of large sticks and twigs are usually built in large trees, but may occasionally be located on cliffs (Ehrlich et al. 1988). Swainson’s hawks feed on small mammals, snakes, lizards, and large insects (Ehrlich et al. 1988). At least one threat to the species is the shooting of birds perched along roadsides, but they also are susceptible to pesticides on their wintering grounds in Argentina (Ehrlich et al. 1992; Glinski 1998). The entire Project area lies in the breeding range for the species. There are two known nest sites near alternative routes in Utah. One is in Grand Valley along Link U490 and the other is between Mona and Nephi along Link U650. The Swainson’s hawk is known to breed and forage in the Project area in Colorado, Utah, and Wyoming.

Three-toed Woodpecker (*Picoides dorsalis*) – BLM: Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Utah, Wyoming

The three-toed woodpecker inhabits boreal and montane coniferous forests, generally above 8,000 feet (2,400 meters) (Parrish et al. 2002). Typical nesting trees include alpine fir, Engelmann spruce, blue spruce, and white fir; wintering habitat also includes aspen forest (UDWR 1998). Three-toed woodpeckers are closely associated with infestations of spruce beetles (*Dendroctonus rufipennis*) and other scolytid beetles. This food source is particularly abundant after fires because it attacks trees that have been weakened or killed. Following the increased food supply, three-toed woodpeckers can be common at burn sites (Murphy and Lehnausen 1998). The three-toed woodpecker nests in the trunks of coniferous and deciduous snags and trees and shows a preference for trees with heartrot (Leonard 2001). It is primarily a resident throughout its breeding range, but often migrates elevationally throughout the year. The species can be found in Wyoming, Colorado, and Utah; however, it is only present in the Project area in Wyoming and Utah. In Wyoming, the species is an uncommon year-round resident of coniferous forests (Cerovski et al. 2001). In Utah, the three-toed woodpecker is a permanent resident of the high-elevation plateaus in the south-central portion of the state, including Manti-La Sal National Forest (Bosworth 2003). The species is a MIS on the Uinta National Forest. Much of the Project area lies in the known range of the species and the American three-toed woodpecker is likely to breed and forage in the Project area. One known occurrence is crossed by Link U600 along Utah Highway 31 in Cottonwood Canyon east of Fairview.

Townsend's Big-eared Bat (*Corynorhinus townsendii*) – BLM: Wyoming, Colorado, Utah; USFS: Ashley, Manti-La Sal, and Uinta National Forests; State: Wyoming, Colorado, Utah

The Townsend's big-eared bat is a relatively common species that roosts in caves and abandoned mines and forages in sagebrush, pinyon-juniper, mountain shrub, and mixed conifer communities. It is associated highly with the availability of caves and mines. The Townsend's big-eared bat does not appear to migrate through much of its range, but hibernates locally during winters (Oliver 2000). It is widely distributed throughout the Project area. Alternative routes are in the range of the species and contain suitable habitat. Townsend's big-eared bat is likely to forage in portions of the Project area in Wyoming, Colorado, and Utah.

Trumpeter Swan (*Cygnus buccinator*) – BLM: Wyoming; State: Wyoming

The trumpeter swan is the largest native North American waterfowl. Breeding habitat includes freshwater marshes, ponds, lakes, and occasionally rivers (Hansen et al. 1971). Nests are typically built in emergent vegetation, with surrounding water less than 36 inches deep, but also are found on muskrat structures or house islands with low human disturbance. Nests require approximately 330 feet of open water for takeoff and proximity to large invertebrate populations. Most flocks of trumpeter swans are year-round residents, only migrating short distances to ice-free waters (Mitchell 2010). The trumpeter swan is primarily found in western Canada and Alaska, but localized populations occur throughout the Intermountain and Rocky Mountain regions, including Wyoming. The Project area is in the known range of the trumpeter swan and potential habitat for the species occurs throughout the Project area. However, trumpeter swans are not known to occur in or in the vicinity of alternative routes. Transient trumpeter swans may occur in the Project area.

Vagrant Shrew (*Sorex vagrans*) –State: Wyoming

The vagrant shrew occurs from southern British Columbia and Alberta south to central Nevada with an isolated population in central Mexico. The species is considered rare in Wyoming because populations are limited in numbers due to dependence on vulnerable riparian habitat and ongoing loss of habitat. The vagrant shrew prefers areas with moist soil, leaf litter accumulation, and/or rotting logs in a variety of habitats including riparian shrub, meadow grassland, bog, and conifer forest. A portion of the Project area lies in the predicted vagrant shrew range in southwestern Wyoming (WGFD 2010a).

Virginia Rail (*Rallus limicola*) – State: Wyoming

The Virginia rail is found throughout much of the United States and northern Mexico, excluding the interior southeastern United States. The species breed primarily in freshwater wetlands but may use salt marshes as well. Typically habitat contains shallow water with emergent cover and substrate with a high invertebrate abundance. Virginia rails' primarily feed on small invertebrates and a variety of aquatic plants and seeds of emergent plants (Conway 1995). There are no known occurrences of Virginia rail located in the Project area; however, the entire Project area is in the known range of the species. The Virginia rail is likely to breed and forage in suitable wetland habitats in the Project area.

Western Red Bat (*Lasiurus blossevillii*) – BLM: Utah; State: Utah

The western red bat roosts in trees and foliage in low elevation, riparian cottonwood forests. The species is migratory and spends winters outside of the Project area. In Utah, historical records indicate the presence of the species in Washington County, but none have been observed since the 1950s, which is believed to correlate with the replacement of cottonwoods with tamarisk (*Tamarix* spp.). The western red bat is very rare in Utah, but is known to occur in Washington, Carbon, and Utah counties (Bosworth 2003). Some alternative routes are in the summer range of the species in Utah and contain suitable habitat. The western red bat is very rare, but could potentially forage near alternative routes in Utah.

Western Scrub Jay (*Aphelocoma californica*) – State: Wyoming

The western scrub jay is found throughout the Intermountain west, much of California, and parts of Mexico and Texas. As its name implies, the western scrub jay inhabits scrub habitat such as oak, pinyon-juniper, brush, and chaparral as well as orchards and riparian woodland. Western scrub jays are omnivorous feeding on a mix of arthropods, fruit, and seeds depending on the time of year (Curry et al. 2002). The Project area is in the known range of the Western scrub jay and the species is likely to breed and forage in suitable habitats in the Project area.

Western Small-footed Myotis (*Myotis ciliolabrum*) – State: Wyoming

The western small-footed myotis uses a variety of habitats, from desert scrub, grassland, and sagebrush, to pinyon-juniper woodland, pine-fir forests, and urban and agricultural areas. The species hibernates during the colder months, either individually or in colonies. As with many other bats, the western small-footed myotis roosts in caves, mines, and trees. It forages in open areas, searching for small moths, flies, ants, and beetles (Bradley et al. 2006). The range of the western small-footed myotis extends from western Canada, through the western United States, and into central Mexico (Bat Conservation International 2009e). There are no known occurrences of western small-footed myotis in or near the Project area; however, the entire Project lies in the range of the species. Western small-footed myotis are likely to forage near alternative routes.

Western Snowy Plover (*Charadrius alexandrinus nivosus*) – BLM: Colorado, Utah; State: Colorado

Inland western snowy plovers breed on flat, unbroken, barren to sparsely vegetated ground at alkaline/saline lakes, reservoirs, and ponds; riverine sand bars; and occasionally at manmade structures such as sewage plants, salt-evaporators, and agricultural waste-water ponds. The species winters along the Pacific coast and Gulf of California (Page et al. 1995). Nests are generally located near a conspicuous feature (Page et al. 1985), kelp, driftwood, clam shell, cow dropping, or tumbleweed on a barren landscape. Nests are simple scraped depressions on dry ground and lined with small debris located (Page et al. 1995) within 500 feet of water (Beidleman 2000). Though the snowy plover is present in Wyoming, Colorado, and Utah, in the Project area, the species is only documented from the Flaming Gorge area of Wyoming. There is suitable habitat available throughout the Utah portion of the Project area and migrants may occasionally pass through alternative routes.

Western Spiny Softshell (*Apalone spinifera hartwegi*) – State: Wyoming

The western spiny softshell is a subspecies of the spiny softshell turtles that are found throughout much of the eastern and central United States. This subspecies is found west of the Mississippi River to Montana and south to Oklahoma. Spiny softshell turtle inhabit rivers with quiet water and a bottom of mud, sand, or gravel. They also can be found in ponds, canals, and irrigation ditches with permanent water (Stebbins 2003). There are no known occurrences of the western spiny softshell in the Project area; however, the extreme northeastern end of the Project area lies in the predicted range of the species according to the Wyoming State Wildlife Action Plan (WGFD 2010a). The Western spiny softshell may occur in the Project area in suitable aquatic habitats in Carbon County, Wyoming.

White-faced Ibis (*Plegadis chihi*) – BLM: Wyoming, Colorado; State: Wyoming

Great Basin populations of white-faced ibis typically nest in stands of hardstem bulrush (*Scirpus acutus*), Olney’s bulrush (*S. olneyi*), and alkali bulrush (*S. paludosus*). Colorado populations are found in cattail and giant burreed (*Sparganium eurycarpum*). Foraging areas include adjacent flooded wetlands with short emergent plants (sedges, spikerushes, saltgrass, and greasewood) (Ryder and Manry 1994). The white-faced ibis also has been observed feeding in nearby irrigated crops, particularly alfalfa, in the Great Basin Valley (Bray and Klebenow 1988). The white-faced ibis winters in the southern United States into Central and South America (UDWR 2000). In Wyoming, Colorado, and Utah, the species is locally distributed and moves frequently in response drought and rain. Utah’s Great Salt Lake is believed to be the largest breeding colony in the world. In the Project area, breeding has been confirmed in Carbon County, Wyoming (Cerovski et al. 2004); important areas in Colorado during migration include Browns Park National Wildlife Refuge (Little Snake BLM Field Office) and Six and Fifty Reservoir near Mack (BLM Grand Junction Field Office) and potential habitat is present throughout Utah (UDWR 2000). White-faced ibis may occur in the Project area as incidental migrants, but are not likely to breed in the Project area.

White-tailed Prairie Dog (*Cynomys leucurus*) – BLM: Wyoming, Colorado, Utah; State: Utah

The white-tailed prairie dog occurs from south central Montana south to northeastern Utah and western Colorado in arid grasslands and shrub/grassland habitats with less than 12 to 15 percent slopes. The species is found in intermountain valleys, benches, and plateaus with diverse grass and forb cover (WGFD 2005b). White-tailed prairie dog populations are highly dynamic; however, abundance has greatly decreased since information has been recorded, likely due to changes in wildfire frequency, resource extraction, grazing, disease, predation, and fluctuation in availability of forage (Keinath 2004). Large complexes of white-tailed prairie dogs in Wyoming and northwest Colorado account for between 50 and 75 percent of all white-tailed prairie dogs (Keinath 2004). A large portion of the Project area east of the Wasatch Mountains is in the range of the species. Numerous prairie dog colonies are near alternative routes throughout Utah, Wyoming, and Colorado.

Willow Flycatcher (*Empidonax traillii*) – State: Wyoming

Willow flycatchers breed throughout much of the northern and southwestern United States. There are four or five subspecies that are generally accepted. The southwestern willow flycatcher (*Empidonax traillii extimus*) is discussed in Section J.6.2.1 as it is listed as endangered under the ESA. Willow flycatchers inhabit moist shrubby areas, typically with standing or running water. They primarily feed on insects through aerial capture by hawking or hover-gleaning (Sedgwick 2000). The majority of the Project area lies in the breeding range of the willow flycatcher; however, no known occurrences are in the Project area. The willow flycatcher may breed and forage in suitable habitats in the Project area.

Wood Frog (*Rana sylvatica*) – State: Wyoming, Colorado

Wood frogs are found from Alaska to Nova Scotia and as far south as Georgia and Alabama, but inhabit very little of the western United States. Disjunct populations are found in southern Wyoming in the Medicine Bow Mountains (Carbon and Albany counties) and in the Bighorn Mountains in northern Wyoming west of Sheridan. Wood frogs inhabit damp and shady woods and forests near clear streams and leafy pools. In colder climates, they may inhabit ponds in open grassy areas bordered by thickets of willow and aspen (Stebbins 2003). There are no known occurrences in the Project area; however, the Project area (Link W18) skirts the edge of the predicted range of the population in the Medicine Bow Mountains in Wyoming (WGFD 2010a). The wood frog may occur in suitable habitats in the Project area.

Wyoming Pocket Gopher (*Thomomys clusius*) – BLM: Wyoming; State: Wyoming

The Wyoming pocket gopher is primarily solitary with limited distribution. Abundance and population trends of Wyoming pocket gopher populations are unknown due to limited data. Little is known about the Wyoming pocket gopher, but habitat appears to be dry, gravelly, shallow-soil ridge tops in greasewood communities. The species has been found on edges of eroding washes. Wyoming pocket gopher typically occurs on sites with 50 to 80 percent bare ground, little to no grass or litter cover, and where Wyoming big sagebrush is absent (WGFD 2010a). It is highly fossorial, living in underground burrow systems and tunnels (Keinath and Beauvais 2006). It is the only mammal that occurs exclusively in Wyoming where it is known from southeastern Sweetwater County and southwestern Carbon County (WGFD 2010a). Population integrity is directly linked to habitat quality, and local populations potentially are sensitive to habitat disturbance. Diet includes roots, tubers, and surface vegetation, and the species is active throughout the year. Pocket gophers are ecologically important as prey items and influence soils, microtopography, habitat heterogeneity, and plant species diversity (NatureServe 2012). Alternative routes are in the known range of the Wyoming pocket gopher and contain suitable habitat in Sweetwater and Carbon counties, Wyoming. The Wyoming pocket gopher is likely to occur near alternative routes.

J.6.2.3 U.S. Forest Service Management Indicator Species

This section includes species accounts for USFS MIS that are not USFS sensitive or assigned another status by federal agencies or states and were carried forward for detailed analysis. Species accounts for USFS MIS that are also USFS sensitive species or assigned another status by federal agencies or states are included in Sections J.6.2.1 and J.6.2.2.

American Beaver (*Castor canadensis*) – USFS: Uinta National Forest

The American beaver’s distribution extends throughout North America except the arctic tundra, peninsular Florida, and much of the desert area of the Southwest, including parts of the northern edge of Mexico. Beavers inhabit permanent water sources and prefer low gradient streams, ponds, and small mud-bottomed lakes with damnable outlets. They occur in artificial ponds, reservoirs, and canals where food is available. Deciduous tree and shrub communities are typical habitats for the American beaver (Anderson 2002). Given the wide distribution of American beaver they are likely to occur in the Project area.

Elk (*Cervus elaphus*) – USFS: Ashley and Manti-La Sal National Forests

Elk were historically widespread in Canada and the United States; now they are mostly restricted to the western states. Elk habitat use varies according to location, as they use areas such as alpine pastures, marshy meadows, river flats, and aspen parkland, as well as coniferous forests, brushy clear cuts or forest edges, and semi-desert. In mountainous regions, elk spend summers in alpine meadows and winters in valleys. On more level terrain, elk seek wooded hillsides in summers and open grasslands in winters (Senseman 2002). Refer to Section 3.2.7.4 for more detailed information about elk in the Project area.

Golden Eagle (*Aquila chrysaetos*) – USFS: Ashley and Manti-La Sal National Forests

Golden eagles are widely distributed in the western United States and can be found in a variety of habitats. For hunting, the species prefers open ground or low hills where visibility is good (Ehrlich et al. 1988; Glinski 1998). Golden eagles nest most commonly on cliffs but also are known to nest in trees and manmade structures such as telephone poles (Glinski 1998). Nests from previous years are frequently reused. The species form strong pair bonds, frequently remaining with the same mate for several years, if not life. The golden eagle feeds primarily on mammals, but also will feed on snakes, birds, and large insects when mammals are unavailable (Ehrlich et al. 1988; Glinski 1998; Terres 1980). The golden eagle is a year round resident of the Project area, and there are numerous known occurrences including nest sites near alternative routes.

Lincoln's Sparrow (*Melospiza lincolnii*) – USFS: Ashley National Forest

The Lincoln's sparrow is relatively common in the western United States with a breeding range from western and central Alaska across Canada through northern Saskatchewan to Labrador, south to southern California, southwestern United States, southern Alberta, central Saskatchewan, central Michigan, New England, and Nova Scotia. A non-breeding range exists in the southern United States and moves south regularly to Honduras, central Panama, and the West Indies. Terrestrial habitats of the Lincoln's sparrow include herbaceous grassland, old field, chaparral/shrubland, and conifer woodland. Bogs, wet meadows, riparian thickets, shrubby forest edge, marshes, brushy fields, and jack plain barrens are all suitable habitats mostly in northern and montane areas. Lincoln's sparrow nests are found on the ground in areas with concealing vegetation or in low shrubs (NatureServe 2011). Due to the wide distribution of the Lincoln's sparrow, it is likely to occur in the Project area.

Macroinvertebrates (aquatic) – USFS: Ashley and Manti-La Sal National Forests

The term macroinvertebrates encompasses a wide variety of benthic organisms. The group includes aquatic insects such as mayflies, caddis flies, daphnia, cyclops, and stoneflies; mollusks; and worms (Smith 2008). These species serve as food for much of the vertebrate life inhabiting the rivers and lakes of the national forests. Aquatic macroinvertebrates are considered an MIS for both the Ashley and Manti-La Sal National Forests. Macroinvertebrates inhabit all waterways that may be crossed by alternative routes.

Mule Deer (*Odocoileus hemionus*) – USFS: Ashley and Manti-La Sal National Forests

Mule deer occur across most of North America west of the 100 meridian from 23 to 60 degrees north. Mule deer occupy a variety of habitat types in mountains and lowlands including forests, woodlands, forest edges, shrublands, grasslands with shrubs, and residential areas. Regions with successional vegetation, near agricultural lands are preferred habitat. In winter, mule deer can be found on warmer slopes and areas with minimal snow accumulation (Andersen and Wallmo 1984). Refer to Section 3.2.7.4 for more detailed information about mule deer in the Project area.

Red-naped Sapsucker (*Sphyrapicus nuchalis*) – USFS: Ashley National Forest

As with other sapsuckers, the red-naped sapsucker drills parallel rows of holes (sap wells) into the phloem and xylem of conifers and quaking aspens (*Populus tremuloides*) (Walters et al. 2002). This small woodpecker is a keystone forest species; its abandoned nest holes are used by mountain bluebirds (*Sialia currucoides*), northern saw-whet owls (*Aegoliusacadicus*), and northern flying squirrels (*Glaucomys sabrinus*). A variety of insects and other bird species use its sap wells, either for the sap itself or to feed on the insects drawn to the sap (Floyd et al. 2007; Walters et al. 2002). The rufous hummingbird (*Selasphorus rufus*) is closely associated with the red-naped sapsucker, often nesting near the woodpecker's sap wells, a ready food source (Floyd et al. 2007). The red-naped sapsucker is an MIS for Ashley National Forest. No occurrences of the species are known in or in the vicinity of the Project area.

Song Sparrow (*Melospiza melodia*) – USFS: Ashley National Forest

The song sparrow has a vast breeding range extending throughout North America. Terrestrial habitats of the song sparrow include grassland, old field, shrubland, suburban and orchard, and woodlands; brushy, shrubby, and deep grassy areas along water systems and seacoasts; and marshes (cattail, bulrush, and salt) and are mostly in the northern and eastern portions of the song sparrow's range. Forest edge, bogs, brushy clearings, thickets, hedgerows, and gardens are all typical habitat type (Arcese et al. 2002). The song sparrow is likely to occur along waterways in the Project area.

Warbling Vireo (*Vireo gilvus*) – USFS: Ashley National Forest

The warbling vireo's distribution range extends from British Columbia across the vast majority of the United States excluding Georgia, Florida, and South Carolina, wintering from northern Mexico to Nicaragua. Terrestrial habitat of the warbling vireo includes hardwood forest, mixed forest, savanna, suburban and orchard areas, hardwood woodland, and mixed woodland. During migration periods, open deciduous and mixed deciduous-coniferous woodland, riparian forest and thickets, pine-oak association, orchards, and parks are suitable warbling vireo habitat. In winter, a wide variety of forest, woodland, and scrub habitats are utilized (Gardali and Ballard 2000). Given the wide and diverse habitat distribution of the warbling vireo, it is likely to occur in the Project area.

J.7 Seasonal Restrictions for Special Status Plants

Seasonal restrictions to protect special status plants and their pollinators are not typically identified in BLM RMPs or USFS LRMPs. However, the FWS Draft Energy Development Management Guidelines for *Sclerocactus wetlandicus* and *Sclerocactus brevispinus* Core Conservation Areas identifies the following seasonal restriction recommendation in Level 1 *Sclerocactus* Core Conservation Areas:

Ground-disturbing activities would occur outside of the flowering season, typically late April to mid-May, in *Sclerocactus* core habitat, as defined by the FWS, to avoid adverse impacts on *Sclerocactus* reproductive success related to fugitive dust and pollinator disturbance.

Any seasonal restrictions intended to reduce potential effects on plant species listed under the ESA would be consistent with the conservation measures developed during Section 7 consultation between BLM and FWS.

J.8 Seasonal Restrictions for Wildlife

Seasonal restrictions to protect wildlife are identified in BLM RMPs, USFS LRMPs, state wildlife management plans, and in agency guidelines relevant to the Project area and are described in Selective Mitigation Measure 12 (Section 3.2.7.4.3). Table J-12 summarizes relevant seasonal wildlife restrictions from applicable plans, sometimes with overlapping jurisdiction, by combining the earliest and latest dates identified for each species by applicable agency plans in each state. These dates represent the maximum length that restrictions would be necessary to provide adequate protections to wildlife during sensitive periods and comply with applicable plans and management recommendations. Seasonal restrictions for nesting raptors (Tables J-13 to J-15) were adopted from statewide plans and BLM RMPs. The Rawlins RMP defines active raptor nests as any identified raptor nest site that could provide a nesting opportunity for a raptor. In Utah raptors are managed in accordance with Instruction Memorandum No. UT 2006-096 and the definition of active raptor nests includes both occupied and unoccupied nests as defined in Romin and Muck (2002):

> *Occupied Nests* are defined as those nests which are repaired or tended in the current year by a pair of raptors. Presence of raptors (adults, eggs, or young), evidence of nest repair or nest marking, freshly molted feathers or plucked down, or current years' mute remains (whitewash) suggest site occupancy. Additionally, all nest sites in a nesting territory are deemed occupied while raptors are demonstrating pair bonding activities and developing an affinity to a given area. If this culminates in an individual nest being selected for use by a breeding pair, then the other nests in the nesting territory will no longer be considered occupied for the current breeding season. A nest site remains occupied throughout the periods of initial courtship and pair bonding, egg laying, incubation, brooding, fledging, and post-fledging dependency of the young.
>
> *Unoccupied Nests* are defined as those nests not selected by raptors for use in the current year. Nests would also be considered unoccupied for the non-breeding period of the year. The exact point in time when a nest becomes unoccupied should be determined by a qualified wildlife biologist based upon a knowledge that the breeding season has advanced such that nesting is not expected. Inactivity at a nest site or territory does not necessarily indicate permanent abandonment.

Seasonal restrictions and survey requirements for migratory birds are described in Design Feature 6 and Design Feature 7 (Section 3.2.9.4).

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
Soils				
Bureau of Land Management (BLM)	Moab Field Office Resource Management Plan (RMP)	For slopes greater than 30 percent in the Bookcliffs	BLM approved ground-disturbing activities are not allowed from November 1 to April 30. This restriction includes heavy equipment traffic on existing roads associated with drilling operations.	**Exception**: An exception could be granted if the operator can provide a plan of development demonstrating that the proposed action would be properly designed and constructed to support the anticipated types and levels of use. Roads must be designed to meet BLM road standards for drainage control and surfaced to support heavy equipment and tractor trailers. Adjustments to the timing restriction could be considered by the Field Manager on a case-by-case basis, depending on current soil and weather conditions. **Modification**: None **Waiver**: None
BLM	Moab Field Office RMP	Saline soils in the Mancos Shale	No ground-disturbing activities are allowed during the period from December 1 to May 31. This restriction includes heavy equipment traffic on existing roads associated with drilling operations.	**Exception**: An exception could be granted if the operator can provide a plan of development demonstrating that the proposed action would be properly designed and constructed to support the anticipated types and levels of use. Roads must be designed to meet BLM road standards for drainage control and surfaced to support heavy equipment and tractor trailers. Adjustments to the timing restriction could be considered by the Field Manager on a case-by-case basis, depending on current soil and weather conditions. **Modification**: None **Waiver**: None
Special Status Plants				
Jones' Cycladenia				
BLM	Moab Field Office RMP	Within 300 feet of plants and suitable habitat	Preclude construction activities from May 15 through June 30 in occupied habitat.	None

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
Special Status Wildlife				
Colorado River Fishes				
BLM	Little Snake Field Office RMP	All new pipelines and other controlled-surface uses crossing any critical or occupied habitat of the Colorado River fishes	No work in the active river channel will take place between July 1 and September 30 to prevent adverse effects from sedimentation during spawning; also, no work will take place when larval fishes are drifting in the river channel.	None
Columbian Sharp-tailed Grouse				
BLM	Rawlins Field Office RMP	Within 0.25 mile of perimeter of occupied Colombian sharp-tailed grouse leks	Disruptive activities are prohibited between 6:00 p.m. and 9:00 a.m. from March 1 to May 20	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	In suitable sharp-tailed grouse nesting and early brood-rearing habitat, and within 1 mile of the perimeter of a sharp-tailed grouse lek, or in identified sharp-tailed grouse nesting and early brood-rearing habitat	Avoid ground-disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special-use permit from March 1 to July 15.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	Delineated sharp-tailed grouse winter concentration areas	Ground-disturbing and disruptive activities are prohibited during the period of November 15 to March 14 for the protection of sharp-tailed grouse winter concentration areas.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Little Snake Field Office RMP	Within a 0.25 mile radius of a lek site, in mapped Colorado Parks and Wildlife habitat	Nesting habitat will be closed to ground-disturbing activities from March 1 to June 30. Crucial winter habitat will be closed from December 16 to March 15.	Exceptions will be granted according to criteria established in Appendix B of the RMP.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
Sage-grouse				
BLM	Instruction Memorandum No. WY-2012-019	Sage-grouse nesting/early brood-rearing habitat in core areas	Surface disturbing and/or disruptive activities are prohibited from March 15 to June 30 to protect sage-grouse nesting and early brood-rearing habitat. Apply this restriction to all nesting and early brood-rearing habitats inside core areas regardless of distance from the lek. Where credible data support different time frames for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.	Exceptions to lease stipulations, conditions of approval, and terms and conditions, etc. will continue to be considered on a case-by-case basis consistent with approved RMPs and other BLM policy and regulations as they relate to exceptions.
BLM	Instruction Memorandum No. WY-2012-019	Sage-grouse nesting/early brood-rearing habitat in connectivity areas	Surface disturbing and/or disruptive activities are prohibited from March 15 to June 30 to protect nesting and early brood-rearing habitats within 4 miles of the lek or lek perimeter of any occupied sage-grouse lek in identified connectivity areas. Where credible data support different time frames for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.	Exceptions to lease stipulations, conditions of approval, and terms and conditions, etc. will continue to be considered on a case-by-case basis consistent with approved RMPs and other BLM policy and regulations as they relate to exceptions.
BLM	Instruction Memorandum No. WY-2012-019	Sage-grouse nesting/early brood-rearing habitat outside core or connectivity areas	Surface disturbing and/or disruptive activities are prohibited from March 15 to June 30 to protect sage-grouse nesting and early brood-rearing habitats within 2 miles of the lek or lek perimeter of any occupied lek located outside core or connectivity areas. Where credible data support different time frames for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.	Exceptions to lease stipulations, conditions of approval, and terms and conditions, etc. will continue to be considered on a case-by-case basis consistent with approved RMPs and other BLM policy and regulations as they relate to exceptions.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
BLM	Instruction Memorandum No. WY-2012-019	Sage-grouse late brood-rearing and winter concentration areas	Surface disturbing and/or disruptive activities in sage-grouse winter concentration areas are prohibited from December 1 to March 14 to protect core populations of sage-grouse that use these winter concentration habitats. While the bulk of winter and late brood-rearing habitat necessary to support core area populations is available in core population areas, it may be necessary to protect additional areas of winter concentration that are not located in the current core area boundaries. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated where winter concentration areas or important late brood-rearing areas are identified as supporting populations of greater sage-grouse that attend leks in core.	Exceptions to lease stipulations, conditions of approval, and terms and conditions, etc. will continue to be considered on a case-by-case basis consistent with approved RMPs and other BLM policy and regulations as they relate to exceptions.
State of Wyoming	Executive Order for Greater Sage-grouse in Wyoming, 2011	Outside of the 0.6 mile perimeter of a lek in core areas where breeding, nesting and early brood-rearing habitat is present; unsuitable habitat; winter concentration areas	Activity (Note: production and maintenance activity exempted) will be allowed from July to March 14 outside of the 0.6 mile perimeter of a lek in core areas where breeding, nesting and early brood-rearing habitat is present. In areas used solely as winter concentration areas, exploration and development activity will be allowed March 14 to December 1. Activities in unsuitable habitat also may be approved year-round (including March 15 to June 30) on a case-by-case basis (except in specific areas where credible data shows calendar deviation). Activities may be allowed during seasonal closure periods as determined on a case-by-case basis.	None

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
			While the bulk of winter habitat necessary to support core sage-grouse populations likely occurs inside Core Population Areas, seasonal stipulations (December 1 to March 14) should be considered in locations outside Core Population Areas where they have been identified as winter concentration areas necessary for supporting biologically significant numbers of sage-grouse nesting in Core Population Areas. All efforts should he made to minimize disturbance to mature sagebrush cover in identified winter concentration areas.	
State of Wyoming	Executive Order for Greater Sage-grouse in Wyoming, 2011	Outside 0.6 mile of the perimeter of occupied sage-grouse leks	New noise levels, at the perimeter of a lek, should not exceed 10 decibels above ambient noise (existing activity included) from 6:00 p.m. to 5:00 am. During the initiation of breeding (March 1 to May 15). Ambient noise levels should be determined by measurements taken at the perimeter of a lek at sunrise.	**Exceptions**: Any exceptions to these general or specific stipulations will be considered on a case by case basis and must show that the exception will not cause declines in sage-grouse populations.
State of Wyoming	Executive Order for Greater Sage-grouse in Wyoming, 2011	Within 4 miles of an occupied lek; unsuitable habitat.	Vegetation removal should be limited to the minimum disturbance required by the project. All topsoil stripping and vegetation removal in suitable habitat will occur between July 1 and March 14 in areas that are within 4 miles of an occupied lek. Initial disturbance in unsuitable habitat between March 15 and June 30 may be approved on a case-by-case basis.	**Exceptions**: Any exceptions to these general or specific stipulations will be considered on a case by case basis and must show that the exception will not cause declines in sage-grouse populations.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
Colorado Division of Wildlife	Colorado Greater Sage-grouse Conservation Plan	Breeding habitat; summer-fall habitat; winter habitat	Avoid activities in breeding habitat (March-July), lek habitat (March to mid-May), nesting habitat (April to June), early brood-rearing habitat (mid-May to July), summer-fall habitat (July to September), and winter habitat (October to February)	None
Colorado Division of Wildlife	Colorado Greater Sage-grouse Conservation Plan	Lek habitat	Any activities associated with anthropogenic features, or any other bird-disturbing activities, should be limited between sunset and 2 hours after sunrise.	None
State of Utah	Conservation Plan for Greater Sage-grouse in Utah, 2013	Sage-grouse lek	Employ seasonal disturbance stipulations as follows: ▪ Implement time-of-day stipulations during the season when the lek is occupied (e.g., no activity from 2 hours before sunrise to 2 hours after sunrise). ▪ Avoid activities (i.e., construction, vehicle noise, etc.) that will disturb lek attendance or breeding from February 15 to May 15. The local Division of Wildlife Resources biologist should be consulted for time and distance determinations based on site-specific conditions.	None
State of Utah	Conservation Plan for Greater Sage-grouse in Utah, 2013	Nesting and brood-rearing area	Avoid activities (i.e., construction, vehicle noise, etc.) that will disturb nesting or brood-rearing from April 1 to August 15. The local Division of Wildlife Resources biologist should be consulted for time and distance determinations based on site-specific conditions.	None
State of Utah	Conservation Plan for Greater Sage-grouse in Utah, 2013	Winter habitat	Avoid activities (i.e., construction, vehicle noise, etc.) that will disturb wintering sage-grouse from November 15 to March 15. The local Division of Wildlife Resources biologist should be consulted for time and distance	None

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
			determinations based on site-specific conditions.	
BLM	Rawlins Field Office RMP	Within 0.25 mile of perimeter of occupied sage-grouse leks	Disruptive activities are prohibited between 6 p.m. and 9 a.m. from March 1 to May 20	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	In suitable greater sage-grouse nesting and early brood-rearing habitat within 2 miles of the perimeter of an occupied greater sage-grouse lek, or in identified greater sage-grouse nesting and early brood-rearing habitat	Avoid ground-disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special-use permit from March 1 to July 15.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	Delineated greater sage-grouse winter concentration areas	Ground-disturbing and disruptive activities are prohibited during the period of November 15 to March 14 for the protection of greater sage-grouse winter concentration areas.	None
BLM	Little Snake Field Office RMP	Within a 4 mile radius of the perimeter of a lek	Avoidance areas for ground-disturbing activities between March 1 and June 30. The actual area to be avoided will be determined on a case-by-case basis, depending on applicable scientific research and site-specific analysis and in coordination with commodity users and other appropriate entities. The use of the following best management practices from the RMP will be encouraged for all ground-disturbing activities, and BLM may require implementation of some of these best management practices. Use of these best management practices becomes even more important once a disturbance affects 10 percent of the nesting habitat within a 4 mile	None

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
			radius of an active lek. As new best management practices are developed, they may be added to this list of best management practices or may replace some of those now listed. ▪ Habitat Reclamation: • Use early and effective reclamation techniques, including interim reclamation, to allow sage-grouse habitat to be re-established as soon as possible. This may require multiple reclamation efforts. • Use reclamation seed mixes, consisting of native bunchgrasses, forbs, and subspecies of big sagebrush, that are appropriate for the disturbed site and its potential.	
BLM	Little Snake Field Office RMP	Near active sage-grouse leks	Limit non-ground-disturbing activities during the breeding season, March 1 to May 1, to portions of the day after 9 a.m. and before 4 p.m.	None
BLM	Little Snake Field Office RMP	Crucial winter habitat	Closed from December 16 to March 15	None

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
BLM	White River Field Office RMP	Sage-grouse nesting habitat; within 2 miles of identified leks	This area encompasses suitable sage grouse nesting habitat associated with Nest Habitat individual leks. This stipulation will not take effect until direct and indirect impacts on suitable nesting cover exceeds 10 percent of the habitat available within 2 miles of identified leks. Further development, after this threshold has been exceeded, will not be allowed from April 15 through July 7. (Note: Development can occur until 10 percent of the habitat associated with a lek is affected, from then on, additional activity can occur from July 8 through April 14).	**Exception:** The Area Manager may grant an exception if an environmental analysis and consultation with the Colorado Division of Wildlife (CDOW) indicates that the proposed action could be conditioned so as not to affect nest attendance, egg/chick survival, or nesting success. An exception also could be granted if the Applicant, BLM, and CDOW negotiate compensation that would satisfactorily offset the anticipated losses of nesting habitat or nesting activities. Actions designed to enhance the long-term utility or availability of suitable nest habitat may be excepted. **Modification**: The Area Manager may modify the size of the timing limitation area if an environmental analysis indicates that the proposed action could be conditioned so as not to affect nest attendance, egg/chick survival, or nesting success. Timeframes may be modified if operations could be conditioned to allow a minimum of 70 percent of nesting attempts to progress through hatch. **Waiver**: This stipulation may be waived if CDOW determines that the described lands are incapable of serving the long-term requirements of sage grouse nesting habitat and that these ranges no longer warrant consideration as components of sage grouse nesting habitat.
BLM	White River Field Office RMP	Sage Grouse Crucial Winter Habitat	This area encompasses sagebrush habitats that are occupied by wintering concentrations of grouse, or represent the only habitats that remain available for use during periods of heavy snowpack. No development activity will be allowed between December 16 and March 1. The CDOW has indicated that these	Exception, modification, and waiver language will be developed in cooperation with the CDOW after the affected areas have been delineated.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
			features exist on public lands in the White River Resource Area but have not yet delineated specific areas that will be subject to this timing restriction.	
BLM	Vernal Field Office RMP	Within 2 miles of active sage-grouse leks	No ground-disturbing activities will be allowed from March 1 through June 15.	None
BLM	Moab Field Office RMP	Within 2 miles of a lek	Allow no ground-disturbing activities in occupied nesting and brood-rearing habitat from March 15 to July 15	**Exception**: An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the brooding/nesting habitat is not active. **Modification**: The Field Manager may modify the boundaries of the stipulation area if (1) portions of the area do not include brooding/nesting habitat, or (2) the brooding/nesting habitat has been completely abandoned or destroyed, or (3) occupied brooding/nesting habitat occurs outside the current defined area; as determined by the BLM. **Waiver**: A waiver may be granted if there is no active brooding/nesting habitat in the leasehold and it is determined the habitat has been completely abandoned or destroyed or occurs outside the current defined area, as determined by the BLM.

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
BLM	Moab Field Office RMP	In occupied winter habitat	Allow no ground-disturbing activities in occupied winter habitat from November 15 to March 14.	**Exception**: An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not occupied during the winter season. **Modification**: The Field Manager may modify the boundaries of the stipulation area if: ▪ portions of the area do not include winter habitat, or ▪ the brooding/nesting habitat has been completely abandoned or destroyed, or ▪ occupied winter activity occurs outside the current defined area; as determined by the BLM. **Waiver**: A waiver may be granted if the winter habitat in the leasehold has been completely abandoned or destroyed or occurs outside the current defined area, as determined by the BLM.
BLM	Price Field Office RMP	Within 2 miles of a known greater sage-grouse lek.	Allow no ground-disturbing or otherwise disruptive activities between March 15 to July 15	**Exception**: The Authorized Officer may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the habitat for nesting or early brood-rearing activities. **Modification**: Season may be adjusted depending on climatic and habitat conditions. Disturbance could occur if the activity were proposed to occur in the buffer, but would occur in non-sagebrush habitat, (i.e., the activity could be allowed if it was not in sage-grouse habitat and did not in some other way disturb nesting or brood-rearing activity). **Waiver**: This stipulation may be waived if, in

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				cooperation with Utah Division of Wildlife Resources (UDWR), it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.
BLM	Price Field Office RMP	Sage-grouse wintering areas; crucial winter habitat	Closed seasonally between December 1 and March 14	**Exception**: Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or habitat conditions if certain criteria are met and if activities would not cause undue stress to wintering greater sage-grouse. **Modification**: Season may be adjusted depending on climatic and habitat conditions. **Waiver**: This stipulation may be waived if, in cooperation with the state wildlife agency, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.
BLM	Salt Lake Field Office RMP	Within 0.5 mile of sage grouse strutting grounds (leks) and crucial sage grouse nesting habitat; in winter crucial habitat areas	BLM will protect from disturbing activities within 0.5 mile of sage grouse strutting grounds (leks) and crucial sage grouse nesting habitat between March 15 and June 15 each year, and in winter crucial habitat areas December 1 through March 1.	Specific exceptions may be granted by BLM if the proposed activity will not seriously disturb the wildlife habitat values being protected.
Southwestern Willow Flycatcher				
BLM	Moab Field Office RMP	In occupied southwestern willow flycatcher habitat.	Unavoidable ground-disturbing activities in occupied southwestern willow flycatcher habitat should only be conducted when preceded by current year survey, should only occur between August 16 and April 30 (i.e., the period when southwestern willow flycatcher are not likely to be breeding), and should be monitored to ensure that adverse impacts on southwestern willow flycatcher are minimized or avoided, and to document the success of project-specific	None

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			mitigation/protection measures. As monitoring is relatively undefined, project-specific requirements must be identified.	
BLM	Moab Field Office RMP	Within 0.25 mile of suitable southwestern willow flycatcher habitat	Habitat disturbances (i.e., organized recreational activities requiring special-use permits, drilling activities, etc.) will be avoided within 0.25 mile of suitable southwestern willow flycatcher habitat from May 1 to August 15.	None
BLM	Richfield Field Office RMP	All ground-disturbing activities should be restricted within a 0.25-mile buffer from suitable riparian habitats and permanent surface disturbances should be avoided within 0.5 mile of suitable southwestern willow flycatcher habitat.	Unavoidable ground-disturbing activities in occupied southwestern willow flycatcher habitat should only be conducted when preceded by current year survey, should only occur between August 16 and April 30 (i.e., the period when southwestern willow flycatcher are not likely to be breeding), and should be monitored to ensure that adverse impacts on southwestern willow flycatcher are minimized or avoided, and to document the success of project-specific mitigation/protection measures. As monitoring is relatively undefined, project-specific requirements must be identified.	None
Mountain Plover				
BLM	Rawlins Field Office RMP	Potential mountain plover habitat	Ground-disturbing and disruptive activities (including reclamation activities) are not allowed during the reproductive period of April 10 to July 10 for the protection of breeding and nesting mountain plover.	Unless surveys consistent with the plover guidelines or other methods approved by the U.S. Fish and Wildlife Service find that no plovers are nesting in the area. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
BLM	Rawlins Field Office RMP	Within 0.5 mile of the identified mountain plover-occupied habitat	Traffic will be minimized and Speed limits will be posted at 25 miles per hour (mph) on resources roads and 35 mph on local roads during the brood-rearing period (June 1 to July 10).	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	Identified mountain plover-occupied habitat	Traffic speed and traffic volume will be limited during nighttime hours from April 10 to July 10	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	Identified mountain plover-occupied habitat	Work schedules and shift changes will be modified from June 1 to July 10 to avoid the periods of activity from a ½ hour before sunrise to 10:00 a.m. and from 5:00 p.m. to a ½ hour after sunset.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Little Snake Field Office RMP	Within 0.25 mile of all plover nest sites	Prohibit surface use from April 1 to July 15	The boundaries of the stipulated area may be modified if the Authorized Officer determines that portions of the area are not critical to the mountain plover.
Western Yellow-billed Cuckoo				
BLM	Rawlins Field Office RMP	Within 0.5 mile of identified habitat	Ground-disturbing and disruptive activities potentially disruptive to Western yellow-billed cuckoos are prohibited from April 15 to August 15 for the protection of nesting Western yellow-billed cuckoos.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Little Snake Field Office RMP	Current yellow-billed cuckoo habitat	Construction of roads, pipelines, and power lines through riparian habitat should not occur from June 1 through August 1.	None
Raptors[1]				
BLM	Moab Field Office RMP	Within spatial buffers (0.25 mile for burrowing owl and 0.5 mile for ferruginous hawk) of known nesting sites.	In habitat for raptor species, no surface disturbances or occupancy will be conducted during the breeding and nesting season (March 1 to August 31 for burrowing owl and March 1 to August 1 for ferruginous hawk).	**Exception**: An exception would be granted if protocol surveys determine that nesting sites, breeding territories, and winter roosting areas are not occupied.

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
UDWR	Recommended stipulations	Within 0.5 mile of known ferruginous hawk nesting sites.	Restrictions on activities are recommended from February 1 to July 1 (UDWR 2013b).	
Migratory Birds				
BLM	Price Field Office RMP	High-value breeding habitat	Migratory bird nesting areas would be closed seasonally. Birds designated as BLM Special Status Species would have the highest priority.	**Exception**: Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or habitat conditions if activities would not cause undue stress to migratory bird populations. **Modification**: Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening. **Waiver**: None
Big Game - General				
BLM	Rawlins Field Office RMP	Big game (i.e., elk, moose, deer, antelope. And bighorn sheep) crucial winter range	Ground-disturbing and disruptive activities in big game crucial winter range will not be allowed during the period of November 15 to April 30.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Rawlins Field Office RMP	Big game (i.e., elk, bighorn) parturition areas	Ground-disturbing and disruptive activities in big game crucial winter range will not be allowed during the period of May 1 to June 30.	Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.
BLM	Little Snake Field Office RMP	Big game (i.e., mule deer, elk, pronghorn antelope, and bighorn sheep)	Crucial winter habitat will be closed to surface disturbing activities from December 1 to April 30. Big game birthing areas will be closed to surface disturbing activities for the following species and during the following periods: elk calving (April 16 to June 30), pronghorn antelope fawning (May 1 to July 15), and bighorn sheep lambing (May 1 to July 15).	This stipulation will be applied after the big game hunting season. In the case that hunting season extends later, exceptions will be applied through normal procedures.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
BLM	White River Field Office RMP	Big game severe winter range	No development activity is allowed from December 1 through April 30.	**Exception**: The Area Manager may grant an exception if an environmental analysis indicates that the proposed action could be conditioned so as not to interfere with habitat function or compromise animal condition in the project vicinity. An exception also may be granted if the Applicant, BLM, and CDOW negotiate compensation that would satisfactorily offset anticipated impacts on big game winter activities or habitat condition. Under mild winter conditions, when prevailing habitat or weather conditions allow early dispersal of animals from all or portions of a project area, an exception may be granted to suspend the last 60 days of this seasonal limitation. Severity of winter will be determined on the basis of snow depth, snow crusting, daily mean temperatures, and whether animals were concentrated on the winter range during the winter months. Exceptions also may be granted for actions specifically intended to enhance the long-term utility or availability of suitable habitat. **Modification**: The Area Manager may modify the size and-time frames of this stipulation if CDOW monitoring information indicates that current animal use patterns are inconsistent with dates established for animal occupation. Modifications also may be authorized if the proposed action could be conditioned so as not to interfere with habitat function or compromise animal condition. In addition, if the Applicant, BLM, and CDOW agree to habitat compensation that satisfactorily offsets detrimental impacts on activity or habitat condition.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
				Waiver: This stipulation may be waived if the CDOW determines that all or specific portions of the area no longer satisfy this functional capacity.
		Elk		
BLM	Grand Junction Field Office RMP	Elk winter range	▪ No new construction activities will occur; ▪ all activities will be conducted during daylight hours only; and ▪ vehicular access on a daily basis will be limited to a single trip between December 1 and May 1.	None
BLM	Grand Junction Field Office RMP	Elk calving grounds	▪ No new construction activities will occur; ▪ all activities will be conducted during daylight hours only; and ▪ vehicular access on a daily basis will be limited to a single trip between May 15 to June 15.	None
BLM	White River Field Office RMP	Elk production areas	This area encompasses an elk production area. No development is allowed from May 15 through June 30.	**Exception**: The Area Manager may grant an exception if an environmental analysis indicates that the proposed action can be conditioned so as not to interfere with habitat function or compromise animal condition in the project vicinity. An exception also may be granted if the Applicant, BLM, and CDOW negotiate compensation that would satisfactorily offset anticipated impacts on elk production or habitat condition. An exception also may be granted for actions intended to enhance the long-term utility or availability of suitable habitat **Modification**: The Area Manager may modify the size and time frames of this stipulation if CDOW monitoring information indicates that current animal use patterns are inconsistent with dates established for animal

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
				occupation. Modifications could be authorized if the proposed action could be conditioned so as not to interfere with critical habitat function or compromise animal condition. A modification also may be approved if the Applicant, BLM, and CDOW agree to compensation that satisfactorily offset detrimental impacts on elk production or habitat condition. **Waiver**: This stipulation may be waived if CDOW determines that the area is no longer utilized by elk for production purposes.
BLM	White River Field Office RMP	Elk/Deer summer range	This area is in deer and elk summer ranges, which due to limited extent, are considered critical habitat in appropriate CDOW game management units. This stipulation will not take effect until direct and indirect impacts on suitable summer range habitats exceed 10 percent of that available in the individual Game Management Units. When this threshold has been reached, no further development activity will be allowed from May 15 through August 15 (Note: Development is allowed until 10 percent of individual game management unit summer habitat has been affected, then additional development is allowed from August 16 through May 14).	**Exception**: The Area Manager may grant an exception if an environmental analysis indicates that the proposed action could be conditioned to have no additional influence on the utility or suitability of summer range habitats. An exception also may be granted if the Applicant, BLM, and CDOW negotiate compensation that would satisfactorily offset anticipated impacts on summer range function or habitat. Exceptions also may be granted for actions specifically intended to enhance the long-term utility or availability of suitable habitat. **Modification**: The Area Manager may modify the size and time frames of this stipulation if CDOW monitoring information indicates that current animal-use patterns are inconsistent with dates established for animal occupation. Modifications also may be authorized if the proposed action could be conditioned to have no additional influence on the utility or suitability of summer range habitats. **Waiver**: This stipulation may be waived if the

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				CDOW determines that all or specific portions of the area no longer satisfy this functional capacity or that these summer ranges no longer merit critical habitat status. Waivers will also be applied to delineated summer range occurring below 7,350 feet (2,250 meters).
BLM	Vernal Field Office RMP	Elk/deer crucial winter range	Activities that will result in adverse impacts on deer and elk within crucial winter range will not be allowed from December 1 through April 30.	This restriction will not apply if deer and/or elk are not present, or if it is determined through analysis and coordination with UDWR that impacts will be mitigated. Factors to be considered will include snow depth, temperature, snow crusting, location of disturbance, forage quantity and quality, animal condition, and expected duration of disturbance.
BLM	Moab Field Office RMP	Elk/deer winter range	Do not allow ground-disturbing activities from November 15 to April 15.	**Exception**: This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being utilized during the winter period for any given year. **Modification**: The Field Manager may modify the boundaries of the stipulation area (1) if a portion of the area is not being used as winter range by deer/elk or (2) if habitat is being utilized outside of stipulation boundaries as winter range and needs to be protected or (3) if the migration patterns have changed causing a difference in the season of use. **Waiver**: May be granted if the winter range habitat is unsuitable or unoccupied during

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				winter months by deer/elk and there is no reasonable likelihood of future winter range use.
BLM	Moab Field Office RMP	Deer and elk fawning and calving habitat (Bookcliffs and La Sal Wildlife Management Units)	Allow no ground-disturbing activities from May 15 to June 30.	**Exception**: This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being utilized during the critical period for any given year. **Modification**: The Field Manager may modify the boundaries of the stipulation area (1) if a portion of the area is not being used as fawning and calving habitat or (2) if the habitat is being utilized outside of stipulation boundaries and needs to be protected or (3) if the migration patterns have changed causing a difference in the season of use. **Waiver**: May be granted if the fawning and calving habitat is unsuitable or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.
BLM	Price Field Office RMP	Elk and mule deer crucial winter habitat	Closed December 1 to April 15	**Exception**: Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats. **Modification**: Season may be adjusted depending on climatic and range conditions. **Waiver**: A waiver may be granted if the winter range habitat is unsuitable for or unoccupied during winter months by deer/elk

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				and there is no reasonable likelihood of future winter range use.
BLM	Price Field Office RMP	Elk calving and mule deer fawning areas located in the crucial summer habitat	Closed May 15 to July 5	**Exception**: Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats. **Modification**: Season may be adjusted depending on climatic and range conditions. **Waiver**: A waiver may be granted if the fawning and calving habitat is unsuitable or unoccupied by deer/elk and there is no reasonable likelihood of future use.
BLM	Salt Lake Field Office RMP	In crucial elk winter range; calving areas	BLM will protect important wildlife habitat values from disturbing activities by restricting seismic work, well development, new road construction, rights-of-way, and other disturbing activities (excluding maintenance activities) from December 1 to April 30, and calving areas May 1 to June 30.	None
UDWR	Recommended stipulations	Elk rut in crucial winter and summer range and calving areas	Restrictions on activities are recommended from September 1 to October 15.	
Mule Deer				
BLM	Grand Junction Field Office RMP	Deer winter range	▪ No new construction activities will occur; ▪ all activities will be conducted during daylight hours only; and ▪ vehicular access on a daily basis will be limited to a single trip between December 1 and May 1.	None
BLM	Vernal Field Office RMP	Mule deer migration corridors in McCook and Monument Ridge	No ground-disturbing activities will be allowed from April 15 through May 31	None
BLM	Salt Lake Field	In mule deer winter	BLM will protect important wildlife habitat	Specific exceptions may be granted by BLM

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
	Office RMP	range	values from disturbing activities by restricting seismic work, well development, new road construction, rights-of-way, and other disturbing activities (excluding maintenance activities) from December 1 to April 15.	if the proposed activity will not seriously disturb the wildlife habitat values being protected.
BLM	Salt Lake Field Office RMP	In crucial mule deer summer/fawning habitats	BLM will protect important wildlife habitat values from disturbing activities by restricting seismic work, well development, new road construction, rights-of-way, and other disturbing activities (excluding maintenance activities) from April 15 to July 1.	Specific exceptions may be granted by BLM if the proposed activity will not seriously disturb the wildlife habitat values being protected.
UDWR	Recommended stipulations	Mule deer rut in crucial winter range	Restrictions on activities are recommended from November 1 to November 30	None
UDWR	Recommended stipulations	Mule deer winter range	Restrictions on activities are recommended from November 1 to April 1	None
UDWR	Recommended stipulations	Mule deer parturition in crucial summer range	Restrictions on activities are recommended from May 15 to July 15	None
Pronghorn				
BLM	White River Field Office RMP	Pronghorn production areas	No development activity is allowed in this area between May 1 and June 30. The CDOW has indicated that these features exist on public lands in the White River Resource Area but have not yet delineated specific areas that will be subject to this timing restriction.	Specific exception, modification, and waiver language will be developed in cooperation with the CDOW after the affected areas have been delineated.
BLM	Vernal Field Office RMP	Pronghorn fawning ground in Antelope Flat	Do not allow activities that will result in adverse impacts on antelope from May 1 through June 30.	This restriction does not apply if pronghorn are not present or if impacts will be mitigated through other management actions. This restriction also does not apply to maintenance and operations of existing facilities.
BLM	Moab Field Office RMP	Pronghorn fawning grounds in Cisco Desert and Hatch Point (LaSal Wildlife Management Units)	Allow no ground-disturbing activities from May 1 to June 15.	**Exception**: May be granted to these dates by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or if it is determined the habitat is not being utilized for fawning in any given year.

TABLE J-12 SEASONAL RESTRICTIONS IN SENSITIVE HABITATS				
Agency	**Applicable Plan**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				Modification: The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as fawning grounds or if habitat is being utilized outside of stipulation boundaries as crucial fawning grounds and needs to be protected. **Waiver**: May be granted if the fawning grounds are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the fawning grounds.
BLM	Salt Lake Field Office RMP	In antelope fawning areas	BLM will protect important wildlife habitat values from disturbing activities by restricting seismic work, well development, new road construction, rights-of-way, and other disturbing activities excluding maintenance activities from April 15 to July 1.	Specific exceptions may be granted by BLM if the proposed activity will not seriously disturb the wildlife habitat values being protected.
Moose				
BLM	Price Field Office RMP	Crucial yearlong moose habitat	Closed seasonally December 1 to April 15	**Exception**: Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to moose populations or habitats. **Modification**: Season may be adjusted depending on climatic and range conditions. **Waiver**: A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by moose and there is no reasonable likelihood of future winter range use.

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
Bighorn Sheep				
BLM	Grand Junction Field Office RMP	Bighorn winter range	▪ No new construction activities will occur; ▪ all activities will be conducted during daylight hours only; and ▪ vehicular access on a daily basis will be limited to a single trip between December 1 and May 1.	None
BLM	Price Field Office RMP	Desert bighorn sheep and Rocky Mountain bighorn sheep crucial yearlong habitat	Closed seasonally April 15 to June 15	**Exception**: Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to desert bighorn sheep and Rocky Mountain bighorn sheep populations or habitats. **Modification**: Season may be adjusted depending on climatic and range conditions. **Waiver**: A waiver may be granted if the habitat is determined to be unsuitable for lambing and there is no reasonable likelihood of future use as bighorn lambing grounds.
Wild Horses				
BLM	Little Snake Field Office RMP	Within a 1-mile radius from wild horse water sources	No drilling or development operations will be permitted from March 1 to December 1.	None
BLM	Grand Junction Field Office RMP	Wild horse winter range	▪ No new construction activities will occur; ▪ all activities will be conducted during daylight hours only; and ▪ vehicular access on a daily basis will be limited to a single trip between December 1 and May 1.	None

TABLE J-12
SEASONAL RESTRICTIONS IN SENSITIVE HABITATS

Agency	Applicable Plan	Area to Which Restriction Applies	Restriction	Exception
BLM	Grand Junction Field Office RMP	Wild horse foaling	▪ No new construction activities will occur; ▪ all activities will be conducted during daylight hours only; and ▪ vehicular access on a daily basis will be limited to a single trip between March 1 to July 1.	None
BLM	White River Field Office RMP	Herd management areas	To protect wild horses in this area, intensive development activities may be delayed for a specified 60 day period in the spring foaling period between March 1 and June 15.	None

SOURCES: Bureau of Land Management 1987; 1990; 2008a, b, c, d, e; 2011d; 2012e; State of Utah 2013; Colorado Greater Sage-grouse Steering Committee 2008; Utah Division of Wildlife Resources 2013b
NOTE: [1]Tables J-13, J-14, and J-15 include seasonal and spatial restrictions for nesting raptors in Wyoming, Colorado, and Utah.

TABLE J-13 SPATIAL AND SEASONAL BUFFERS FOR BREEDING RAPTORS IN WYOMING				
	Wyoming Ecological Services Field Office		**Bureau of Land Management Rawlins Field Office**	
Common Name	**Spatial Buffer (miles)**	**Seasonal Buffer**	**Spatial Buffer (miles)**	**Seasonal Buffer**
Raptors of Conservation Concern				
Golden eagle	0.50	January 15 to July 31	1.0	February 1 to July 15
Ferruginous hawk	1.0	March 15 to July 31	1.0	March 1 to July 31
Swainson's hawk	0.25	April 1 to August 31	0.75	April 1 to July 31
Bald eagle communal roost areas[1]	–	–	2.0	Surface disturbing or other disruptive activities potentially disruptive to a bald eagle communal roost will be prohibited within 2 miles of the communal roost during the period of February 1 to August 15.
Bald eagle communal winter roost areas	–	–	1.0	Surface disturbing or other disruptive activities potentially disruptive to identified bald eagle communal winter roost sites will be prohibited within 1 mile of the winter roost site from November 1 to April 1. No ground-disturbing activities will be permitted within 0.5-mile of active bald eagle communal winter roost sites year-round[2].
Bald eagle	Refer to National Bald Eagle Management Guidelines	Refer to National Bald Eagle Management Guidelines	Refer to National Bald Eagle Management Guidelines	Refer to National Bald Eagle Management Guidelines
Prairie falcon	0.50	March 1 to August 15	0.75	April 1 to July 31
Peregrine falcon	0.50	March 1 to August 15	0.75	March 1 to July 31
Short-eared owl	0.25	March 15 to August 1	0.75	March 1 to July 31
Burrowing owl	0.25	April 1 to September 15	0.75	April 1 to September 15
Northern goshawk	0.50	April 1 to August 15	0.75	April 1 to August 31
Additional Wyoming Raptors				
Osprey	0.25	April 1 to August 31	0.75	April 1 to July 31
Cooper's hawk	0.25	March 15 to August 31	0.75	April 1 to July 31
Sharp-shinned hawk	0.25	March 15 to August 31	0.75	April 1 to July 31
Red-tailed hawk	0.25	February 1 to August 15	0.75	February 1 to July 15

TABLE J-13
SPATIAL AND SEASONAL BUFFERS FOR BREEDING RAPTORS IN WYOMING

Common Name	Wyoming Ecological Services Field Office		Bureau of Land Management Rawlins Field Office	
	Spatial Buffer (miles)	Seasonal Buffer	Spatial Buffer (miles)	Seasonal Buffer
Rough-legged hawk (winter resident only)	–	–	–	–
Northern harrier	0.25	April 1 to August 15	0.75	April 1 to July 31
Merlin	0.50	April 1 to August 15	0.75	April 1 to July 31
American kestrel	0.13	April 1 to August 15	0.75	April 1 to July 31
Common barn owl	0.13	February 1 to September 15	0.75	February 1 to July 15
Northern saw-whet owl	0.25	March 1 to August 31	–	–
Boreal owl	0.25	February 1 to July 31	–	–
Long-eared owl	0.25	February 1 to August 15	0.75	March 1 to July 31
Great horned owl	0.13	December 1 to September 30	0.75	February 1 to July 15
Northern pygmy-owl	0.25	April 1 to August 1	–	–
Eastern screech -owl	0.13	March 1 to August 15	0.75	March 1 to July 31
Western screech-owl	0.13	March 1 to August 15	0.75	March 1 to July 31
Great gray owl	0.25	March 15 to August 31	–	–

SOURCE: Bureau of Land Management 2008b; U.S. Fish and Wildlife Service 2012f

NOTES:

[1] A communal roost is defined as an area usually less than 10 acres in size that contains or has contained more than 6 bald eagles on any given night.

[2] The year-round buffer zone on ground-disturbing activities of 0.5 mile of active (includes both occupied and unoccupied as defined in the introduction to Section J.8) bald eagle communal winter roost sites may be adjusted based on site-specific information through coordination with and written concurrence from the U.S. Fish and Wildlife Service, Wyoming Field Office.

TABLE J-14
RECOMMENDED SPATIAL AND SEASONAL BUFFERS
FOR BREEDING RAPTORS IN COLORADO

Common Name	Colorado Department of Wildlife		Bureau of Land Management Field Office[1]	
	Spatial Buffer (miles)	Seasonal Buffer[1]	Spatial Buffer (miles)	Seasonal Buffer[2]
Raptor nesting sites; listed, proposed, and candidate threatened and endangered and Bureau of Land Management (BLM) sensitive except bald eagle and ferruginous hawks[3]	–	–	0.50	This area encompasses the nests of threatened, endangered, or candidate raptors. No development activities are allowed within 0.5 mile of identified nest sites from February 1 through August 15, or until fledgling and dispersal of young (White River Field Office[4]).

TABLE J-14
RECOMMENDED SPATIAL AND SEASONAL BUFFERS FOR BREEDING RAPTORS IN COLORADO

	Colorado Department of Wildlife		Bureau of Land Management Field Office[1]	
Common Name	**Spatial Buffer (miles)**	**Seasonal Buffer[1]**	**Spatial Buffer (miles)**	**Seasonal Buffer[2]**
Raptor nesting sites; other than threatened and endangered and candidate threatened and endangered species[3]	–	–	0.50	No development activities are allowed within 0.5 mile of identified nests from February 1 through August 15, or until fledgling and dispersal of young (White River Field Office[4]).
Bald eagle nests[3]	0.50	October 15 to July 31	0.25	February 1 to August 15 (No development is allowed within 0.5 mile of identified nests from December 15 to July 15, or until fledgling and dispersal of young in White River Field Office[4]).
Bald eagle concentration areas	–	–	–	Protect bald eagle concentration areas from ground-disturbing activities from December 1 to April 1 (Grand Junction Field Office).
Active bald eagle winter night roost without a direct line of sight	0.25	November 15 to March 15	0.25	February 1 to August 15 (within 0.5 mile of identified roost sites or concentration areas from November 1 to April 15 White River Field Office[4]).
Bald eagle hunting perch	Contact Colorado Department of Wildlife	Contact CDOW	0.25	February 1 to August 15
Ferruginous hawk	0.50	February 1 to July 15	1.0	No development is allowed within 1 mile of identified nests from February 1 through August 15, or until fledgling and dispersal of young (White River Field Office[4]).
Golden eagle	0.50	December 15 to March 15	0.25	February 1 to August 15
Prairie falcon	0.5	March 15 to July 15	0.25	February 1 to August 15
Peregrine falcon	0.5	March 15 to July 31	0.25	February 1 to August 15 (March 15- July 1 in Grand Junction Field Office)
Burrowing owl	150 feet	March 15 to October 31	0.25	February 1 to August 15
Northern goshawk	0.50	March 1 to September 15	0.25	February 1 to August 15
Osprey	0.25	April 1 to August 31	0.25	February 1 to August 15

TABLE J-14 RECOMMENDED SPATIAL AND SEASONAL BUFFERS FOR BREEDING RAPTORS IN COLORADO

Common Name	Colorado Department of Wildlife		Bureau of Land Management Field Office[1]	
	Spatial Buffer (miles)	Seasonal Buffer[1]	Spatial Buffer (miles)	Seasonal Buffer[2]
Red-tailed hawk	0.33	February 15 to July 15	0.25	February 1 to August 15
Swainson's hawk	0.25	April 1 to July 15	0.25	February 1 to August 15
All other raptors	Not applicable	Not applicable	0.25	February 1 to August 15

SOURCE: Bureau of Land Management 2011d; Colorado Parks and Wildlife 2008

NOTES:

[1] Little Snake Field Office unless otherwise noted.

[2] Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.

[3] Active nests include both occupied and unoccupied as defined in the introduction to Section J.8.

[4] **Exception**: An exception may be granted to these dates by the Area Manager, if authorization is obtained from the U.S. Fish and Wildlife Service (through applicable provisions of the Endangered Species Act, Eagle Protection Act, or Migratory Bird Treaty Act) to harass, harm, wound, or kill in the context of active nesting attempts. An exception also can be granted if an environmental analysis of the proposed action indicates that nature or conduct of the activity could be conditioned so as not to impair the utility of nest for current or subsequent nesting activity or occupancy. The Area Manager may, also grant an exception if the nest is unattended or remains unoccupied by May 15 of the Project year. **Modification**: The Area Manager may modify the size of the stipulation area if an environmental analysis indicates that a portion of the area is nonessential to nest utility or function, or that the proposed action could be conditioned so as not to impair the utility of the nest site for current or subsequent nest activities or occupation. The stipulation also may be modified if the Applicant, BLM, and where necessary, other affected interests, negotiate compensation that satisfactorily offsets anticipated impacts on candidate and BLM sensitive raptor breeding activities and/or habitats. Modifications also could occur if sufficient information is provided that supports the contention that the action would not contribute to the suppression of breeding population densities or the population’s production or recruitment regime from a geographic reference area perspective. If a species status is downgraded, or if a species is delisted, the size of the timing limitation area may be reduced. **Waiver**: A waiver may be granted if the species becomes extinct or there is no reasonable likelihood of site occupation over a minimum 10-year period.

TABLE J-15 NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

Common Name	All of Utah		Bureau of Land Management Field Office	
	Spatial Buffer (miles)	Seasonal Buffer	Spatial Buffer (miles)	Seasonal Buffer
Known raptor nest sites (within 0.5 mile of nests occupied in the past 3 years) and raptor crucial cliff-nesting complex habitats[1]	–	–	0.50	Closed seasonally between February 1 to July 15 (Price Field Office[2])
Active and inactive nests; designated as crucial nesting habitat[1]	–	–	0.25	These areas are classified as Category 2 for fluid mineral leasing, and off-highway vehicle use is limited to existing roads and trails to prevent significant disturbance to nesting raptors from March 1 through June 30 (Fillmore Field Office)

TABLE J-15
NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

Common Name	**All of Utah**		**Bureau of Land Management Field Office**	
	Spatial Buffer (miles)	**Seasonal Buffer**	**Spatial Buffer (miles)**	**Seasonal Buffer**
Active raptor nest sites[1]	–	–	0.50	The Bureau of Land Management will protect important wildlife habitat values from disturbing activities by restricting seismic work, well development, new road construction, rights-of-way, and other disturbing activities excluding maintenance activities from March 1 to July 15 (Salt Lake Field Office)
Bald eagle	1.0	No surface disturbing activities within 1 mile of identified nest sites from January 1 to August 31	0.50	No surface disturbing activities or development is allowed within 0.5 mile of identified winter roost sites from November 1 through March 31 (Moab Field Office[3])
Golden eagle	0.50	January 1 to August 31	–	–
Northern goshawk	0.50	March 1 to August 15 (March 1 to September 30 in post-fledgling areas U.S. Forest Service[4])	–	–
Northern harrier	0.50	April 1 to August 15	–	–
Cooper's hawk	0.50	March 15 to August 31	–	–
Ferruginous hawk	0.50	March 1 to August 1	–	–
Red-tailed hawk	0.50	March 15 to August 15	–	–
Sharp-shinned hawk	0.50	March 15 to August 31	–	–
Swainson's hawk	0.50	March 1 to August 31	–	–
Turkey vulture	0.50	May 1 to August 15	–	–
Peregrine falcon	1.0	February 1 to August 31	–	–
Prairie falcon	0.25	April 1 to August 31	–	–
Merlin	0.50	April 1 to August 31	–	–
American kestrel	Refer to migratory bird guidelines in Table J-12	April 1 to August 15	–	–
Osprey	0.50	April 1 to August 31	–	–
Boreal owl	0.25	February 1 to July 31	–	–
Burrowing owl	0.25	March 1 to August 31	–	–
Flammulated owl	0.25	April 1 to September 30	–	–
Great horned owl	0.25	December 1 to September 31	–	–
Long-eared owl	0.25	February 1 to August 15	–	–
Northern saw-whet owl	0.25	March 1 to August 31	–	–

TABLE J-15
NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

	All of Utah		Bureau of Land Management Field Office	
Common Name	**Spatial Buffer (miles)**	**Seasonal Buffer**	**Spatial Buffer (miles)**	**Seasonal Buffer**
Short-eared owl	0.25	March 1 to August 1	–	–
Mexican spotted owl	0.50	March 1 to August 31	0.50	For all temporary actions that may affect owls or suitable habitat. If the action occurs entirely outside of the owl breeding season from March 1 through August 31, and leaves no permanent structure or permanent habitat disturbance, the action can proceed without an occupancy survey. If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season (Moab Field Office[5])
Northern pygmy owl	0.25	April 1 to August 15	–	–
Eastern and Western screech owl	0.25	March 1 to August 15	–	–
Common barn-owl	Refer to migratory bird guidelines in Table J-12	February 1 to September 15	–	–

SOURCE: Romin and Muck 2002

NOTES:

[1] Active nests include both occupied and unoccupied as defined in the introduction to Section J.8.

[2] **Exception**: The Authorized Officer may grant an exception if the raptor nest in question is deemed to be inactive by May 31 and if the proposed activity would not result in a permanent structure or facility that would cause the subject nest to become unsuitable for nesting in future years. **Modification**: Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening. **Waiver**: This stipulation may be waived if, in cooperation with the Utah Division of Wildlife Resources, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 3 years.

[3] Temporary activities or habitat alterations that may disturb nesting bald eagles will be restricted from January 1 to August 31. Additionally, where daily activities must occur in these spatial buffers, and are approved through subsequent consultation, activities should be properly scheduled to occur after 9 a.m. and terminate at least 1 hour before official sunset to ensure that bald eagles using these roosts are allowed the opportunity to vacate their roost in the morning and return undisturbed in the evening.

[4] U.S. Forest Service Land and Resource Management Plan Amendment – Utah Northern Goshawk Project (2000)

[5] Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

J.9 Surface Use Restrictions for Biological Resources

Many BLM RMPs, USFS LRMPs, state wildlife management plans, and agency guidelines relevant to the Project area identify restrictions on surface use (e.g., no surface occupancy, conditional surface use, or no surface disturbance) in addition to seasonal restrictions to protect plants, wildlife, and their habitats. Tables J-16 and J-17 summarize restrictions on surface use of lands to protect biological resources and exception criteria, if identified, from agency policies and plans relevant to the Project area.

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Wetlands and Riparian Areas				
Bureau of Land Management (BLM)	Utah State Office	Within 100 meters of riparian areas	Utah Riparian Policy states that "No new ground-disturbing activities will be allowed"	**Exception**: An exception could be authorized if: ▪ there are no practical alternatives or, ▪ all long-term impacts can be fully mitigated, or ▪ the activity will benefit and enhance the riparian area.
BLM	Little Snake Field Office Resource Management Plan (RMP)	Up to 0.25 mile from perennial water sources (i.e., streams, rivers, springs, and seeps with perennial flow)	No surface occupancy, if necessary, depending on type and use of the water source, soil type, and slope steepness. Soil/slope characteristics that would initiate this no surface occupancy stipulation include those soils defined as fragile soils. The following soil/slope characteristics are indicative of a potentially fragile soil: ▪ Soils rated as highly or severely erodible by wind or water, as described in Natural Resources Conservation Service (NRCS) soil survey reports. ▪ Soils on slopes greater than 35 percent, particularly if they have one of the following characteristics: • a surface texture that is sand, loamy sand, very fine sandy loam, fine sandy loam, silty clay, or clay; • a depth to bedrock that is less than 20 inches (51 centimeters); • an erosion hazard rating of high or very high; and • a K-factor (soil erodibility potential) factor greater than 0.32.	None
BLM	Grand Junction Field Office RMP	Riparian areas	No surface disturbance in riparian areas year round	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
BLM	Vernal Field Office RMP	Within 100 year floodplains or within 100 meters of riparian areas. Also, no ground-disturbing activities in public water reserves or within 100 meters of springs.	No ground-disturbing activities	**Exception**: An exception could be authorized if: ▪ there are no practical alternatives; ▪ impacts could be fully mitigated; or ▪ the action is designed to benefit and enhance the resource values. **Modification**: None **Waiver**: None
BLM	Grand Junction Field Office RMP	Riparian areas and Skippers Island	Prohibit surface disturbance in these areas year round.	None
BLM	Moab Field Office RMP	Within 100 meters of riparian areas; within 100-year floodplains, within 100 meters of a natural spring, or in public water reserves.	Ground-disturbing activities are precluded within 100 meters of riparian areas. Allow no surface occupancy and preclude ground-disturbing activities within 100-year floodplains, within 100 meters of a natural spring, or in public water reserves.	None
BLM	Price Field Office RMP	Natural spring	No surface disturbance or occupancy would be maintained around natural springs to protect the water quality of the spring. The distance would be based on geophysical, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, a 660-foot buffer zone would be maintained.	**Exception**: An exception could be authorized if ▪ there are no practical alternatives; ▪ impacts could be fully mitigated; or ▪ the action is designed to enhance the riparian resources. **Modification**: None **Waiver**: None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
BLM	Price and Richfield Field Office RMPs	Within 100-year floodplain or 100 meters (330 feet) on either side from the centerline of the selected alternative, whichever is greater, along all perennial and intermittent streams, streams with perennial reaches, and riparian areas	No new surface disturbance (excluding fence lines)	**Exception**: An exception could be authorized if ▪ there are no practical alternatives; ▪ impacts could be fully mitigated; or ▪ the action is designed to enhance the riparian resources. **Modification**: None **Waiver**: None
Soils				
BLM	White River Field Office RMP	Landslide areas (i.e., identified soils are considered unstable and subject to slumping and mass movement)	Surface occupancy will not be allowed in such areas delineated from U.S. Department of Agriculture Soil Conservation Service Order III Soil Survey.	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.
BLM	Grand Junction Field Office RMP	Soil slump hazard areas Baxter-Douglas Pass Plateau Canyon	No surface occupancy stipulation	None
BLM	Grand Junction Field Office RMP	Slopes greater than 40 percent; unstable and slumping soils in the areas of Baxter Pass, Douglas Pass, and Plateau Creek; face of the Bookcliffs	No surface occupancy stipulation; allow other ground-disturbing activities only after analyzing site-specific conditions and potential for safety hazards and reclamation	None
BLM	Vernal Field Office RMP	For slopes greater than 40 percent	No surface disturbance will be allowed unless it is determined that it will cause undue or unnecessary degradation to pursue other placement alternatives.	None
BLM	Price Field Office RMP	For slopes greater than 40 percent	No surface occupancy	**Exception**: If after an environment analysis the Authorized Officer determines that it would cause undue or unnecessary degradation to

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS
FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
				pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan would have to include: ▪ An erosion control strategy ▪ Geographic information systems modeling ▪ Proper survey and design by a certified engineer. **Modification**: None **Waiver**: None
Special Status Plants				
BLM Sensitive Plants and Remnant Vegetation Associations				
BLM	White River Field Office RMP	In known populations of these plants	No surface occupancy will be allowed.	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.
Known and Potential Habitat for Listed and Candidate Threatened/Endangered Plant Species or Potential Habitat				
BLM	White River Field Office RMP	On mapped populations of these plants	No surface occupancy will be allowed.	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.
Special Status Plant Species – General				
Clay Phacelia				
U.S. Forest Service/ U.S. Fish and Wildlife Service (FWS)	Clay phacelia conservation measures	Within 650 feet of known occupied habitat	No new development in known occupied sites or within 650 feet of known occupied sites. Existing sites need to be surveyed to determine site boundaries prior to development site selection if development is to occur close to the 650-foot buffer area.	None
Jones Cycladenia				
BLM	Moab Field Office RMP	Within 300 feet of plants and suitable habitat	Preclude ground-disturbing activities within 300 feet of plants and suitable habitat	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Spineless Hedgehog Cactus				
BLM	Grand Junction Field Office RMP	Actual sites	Prohibit surface disturbance in these areas year round.	The decision to protect habitats by placing stipulations on disturbance type activities will be implemented by comparing activities proposed with areas identified for protective management. Applicable stipulations will be placed on projects that lie in the protected areas.
Uinta Basin Hookless Cactus				
BLM	Grand Junction Field Office RMP	Actual sites	Prohibit surface disturbance in these areas year round.	The decision to protect habitats by placing stipulations on disturbance type activities will be implemented by comparing activities proposed with areas identified for protective management. Applicable stipulations will be placed on projects that lie in the protected areas.
Special Status Wildlife				
Black-footed Ferret				
BLM	Grand Junction Field Office RMP	Actual sites	Prohibit surface disturbance in these areas year round.	The decision to protect habitats by placing stipulations on disturbance type activities will be implemented by comparing activities proposed with areas identified for protective management. Applicable stipulations will be placed on projects that lie in the protected areas.
White-tailed Prairie Dog				
BLM	Moab Field Office RMP	Within 660 feet of white-tailed prairie dog colonies	Do not allow ground-disturbing activities within 660 feet of prairie dog colonies identified in prairie dog habitat (Note: the size of the habitat varies by alternative). No permanent aboveground facilities are allowed within the 660-foot buffer.	**Exception**: An exception may be granted if the Applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no reasonable location to develop a lease and avoid colonies the Field Manager will allow for loss of prairie dog colonies and/or habitat to satisfy terms and conditions of the lease.

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
BLM	Moab Field Office RMP	Within 660 feet of Gunnison prairie dog colonies	Do not allow ground-disturbing activities within 660 feet of prairie dog colonies identified in prairie dog habitat (Note: the size of the habitat varies by alternative). No permanent aboveground facilities are allowed within the 660-foot buffer.	**Exception**: An exception may be granted if the Applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no reasonable location to develop a lease and avoid colonies the Field Manager will allow for loss of prairie dog colonies and/or habitat to satisfy terms and conditions of the lease.
BLM	Vernal Field Office RMP	Within 660 feet of prairie dog colonies identified in prairie dog habitat in the Coyote Basin Complex (which includes the Coyote Basin, Kennedy Wash, Shiner, and Snake John subcomplexes) and the Myton Bench Complex.	Do not allow ground-disturbing activities. No permanent aboveground facilities are allowed within the 660-foot buffer.	**Exception**: An exception may be granted if the Applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no reasonable location to develop a lease and avoid colonies the Field Manager will allow for loss of prairie dog colonies and/or habitat to satisfy terms and conditions of the lease. **Modification**: The Field Manager may modify the boundaries of the stipulation area if portions of the area does not include prairie dog habitat or active colonies are found outside the current defined area, as determined by the BLM. **Waiver**: May be granted if, in the leasehold, it is determined that habitat no longer exists or has been destroyed.

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Colorado River Fishes				
BLM	Little Snake Field Office RMP	In critical or occupied habitat of Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), humpback chub (*Gila cypha*), and bonytail (*Gila elegans*).	Require no surface occupancy stipulations.	Exceptions that could adversely affect listed fish (such as bridge abutments) will require site-specific consultation with the FWS.
BLM	Moab Field Office RMP	Within the 100-year floodplain of the Colorado River, Green River, and at the confluence of the Dolores and Colorado rivers	No ground-disturbing activities will be allowed.	Any exceptions to this requirement will require consultation with the FWS. Restrictions on surface disturbance in this critical habitat will be developed through this consultation process.
Columbian Sharp-tailed Grouse				
BLM	Rawlins Field Office RMP	Within 0.25 mile of perimeter of occupied Colombian sharp-tailed grouse leks	Prohibit surface disturbance/occupancy year round	None
BLM	Little Snake Field Office RMP	Within a 0.25-mile radius of a lek site	The no surface occupancy area may be altered depending on the active status of the lek or the geographical relationship of topographical barriers and vegetation screening to the lek site.	None
Greater Sage-grouse				
State of Wyoming	Executive Order for Greater Sage-grouse in Wyoming, 2011	Within 0.6 mile of the perimeter of occupied sage-grouse leks in core areas	No surface occupancy. Other activities may be authorized with the application of appropriate seasonal stipulations, provided the resources protected by the no surface occupancy are not adversely affected.	**Exceptions**: Any exceptions to these general or specific stipulations will be considered on a case-by-case basis and must show that the exception will not cause declines in sage-grouse populations.

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
State of Wyoming	Executive Order for Greater Sage-grouse in Wyoming, 2011	Outside 0.6 mile of the perimeter of sage-grouse leks in core areas	Transportation: Locate main roads used to transport production and/or waste products greater than 1.9 miles from the perimeter of occupied sage-grouse leks. Locate other roads used to provide facility site access and maintenance greater than 0.6 mile from the perimeter of occupied sage-grouse leks in core areas. Construct roads to minimum design standards needed for production activities. Overhead Lines: Bury lines when possible, if not; locate overhead lines at least 0.6 mile from the perimeter of occupied sage-grouse leks in core areas. New lines should be raptor proofed if not buried.	**Exceptions**: Any exceptions to these general or specific stipulations will be considered on a case-by-case basis and must show that the exception will not cause declines in sage-grouse populations.
Colorado Parks and Wildlife (CPW)	Colorado Greater Sage-grouse Conservation Plan	Within a 0.6-mile radius area around a lek	On federal lands, the 0.6-mile radius area around a lek in breeding habitat could be defined as an area of no surface occupancy or avoidance area. Every possible opportunity to avoid or minimize the impact should be exhausted to prevent development in this area, but allowances are provided. The 4-mile radius is not a no surface occupancy or avoidance area. It is an area of consideration where the disturbance guidelines should be applied when, and if, possible.	None
State of Utah	Conservation Plan for Greater Sage-grouse in Utah, 2013	Lek	▪ Avoid disturbance in the lek, if possible. The Applicant must demonstrate why avoidance is not possible. ▪ If avoidance is not possible, use minimization as appropriate to the lek. ▪ If minimization is not sufficient, mitigation is required. Mitigation should be calculated at a minimum of a 4:1 ratio starting with the first acre disturbed. Mitigation must produce lands capable of supporting greater sage-grouse as	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS
FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			habitat before the proposed disturbance occurs, though birds do not need to be using the mitigated area. The Applicant of the disturbance must demonstrate that the conditions have been met. ▪ New permanent disturbance, including structures, fences, and buildings, should not be located in the lek itself. ▪ No permanent disturbance within 1 mile of the lek, unless it is not visible to the sage-grouse using the lek. ▪ Fences should not be located adjacent to leks where bird collisions would be expected to occur. If required, the construction of any fences near the lek should follow the standards identified in the NRCS fence collision risk tool (refer to NRCS/Conservation Effects Assessment Project Conservation Insight Publication *Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes*.) ▪ A disturbance outside the lek should not produce noise that rises more than 10 decibels above the background level at the edge of the lek during breeding season.	
BLM	Little Snake Field Office RMP	Within a 0.6-mile radius of a lek site.	No surface occupancy	The no surface occupancy area may be altered depending on the active status of the lek, habitat characteristics, or the geographical relationship of topographical barriers and vegetation screening to the lek site.
BLM	White River Field Office RMP	Within 0.25 mile of identified lek sites.	No surface occupancy	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.
BLM	Vernal Field Office RMP	Within 0.25 mile of active sage grouse leks	No ground-disturbing activities year round.	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS
FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
BLM	Moab Field Office RMP	Within 0.5 mile of greater sage-grouse leks.	All ground-disturbing activities will be prohibited on a year-round basis.	**Exception**: An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification**: The Field Manager may modify the boundaries of the stipulation area if (1) portions of the area do not include lek sites, or (2) the lek site(s) have been completely abandoned or destroyed, or (3) occupied lek site(s) occur outside the current defined area; as determined by the BLM. **Waiver**: A waiver may be granted if there are no active lek site(s) in the leasehold and it is determined the site(s) have been completely abandoned or destroyed or occur outside current defined area, as determined by the BLM.
BLM	Price Field Office RMP	Within 0.5 mile of greater sage-grouse leks	No surface occupancy.	The BLM Authorized Officer can except, modify, or waive surface stipulations. BLM will coordinate as needed with the appropriate agency or entity. A holder of a land-use authorization document can be excepted from the stipulation on a one-time basis. A modification can be a change in the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently excepts the surface stipulation.
BLM	Richfield Field Office RMP	Within 0.5 mile of greater sage-grouse leks	No surface occupancy	**Exception**: An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification**: The Field Manager may modify the boundaries of the stipulation area if (1) portions of the area do not include lek sites, (2) the lek site(s) have been completely abandoned or destroyed, or (3) occupied lek site(s) occur

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
				outside the current defined area, as determined by the BLM. **Waiver**: A waiver may be granted if there are no active lek site(s) in the leasehold and it is determined the site(s) have been completely abandoned or destroyed or occur outside current defined area, as determined by the BLM.
BLM	Moab Field Office RMP	Within 0.5 mile of a lek in sage-grouse habitat	If greater sage-grouse leks are discovered in sage grouse habitat, no ground-disturbing activities will be allowed.	**Exception**: An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification**: The Field Manager may modify the boundaries of the stipulation area if (1) portions of the area do not include lek sites, or (2) the lek site(s) have been completely abandoned or destroyed, or (3) occupied lek site(s) occur outside the current defined area; as determined by the BLM. **Waiver**: A waiver may be granted if there are no active lek site(s) in the leasehold and it is determined the site(s) have been completely abandoned or destroyed or occur outside current defined area, as determined by the BLM.
BLM	Moab Field Office RMP	Within 0.6 mile of a lek	If Gunnison sage-grouse leks are discovered in sage-grouse habitat, no ground-disturbing activities will be allowed within 0.6 mile of a lek.	**Exception**: An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification**: The Field Manager may modify the boundaries of the stipulation area if (1) portions of the area do not include lek sites, or (2) the lek site(s) have been completely abandoned or destroyed, or (3) occupied lek site(s) occur outside the current defined area, as determined by the BLM. **Waiver**: A waiver may be granted if there are

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS
FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
				no active lek site(s) in the leasehold and it is determined the site(s) have been completely abandoned or destroyed or occur outside current defined area, as determined by the BLM.
Mexican Spotted Owl				
BLM	Little Snake Field Office RMP	All protected activity centers	No surface occupancy will be applied.	None
BLM	Moab Field Office RMP	Within 0.5 mile of identified nest site; in the designated protected activity center	Survey two consecutive years for owls according to established protocol prior to commencing of activity. If owls are found, no permanent actions will occur. If nest site is unknown, no activity will occur in the designated protected activity center.	None
BLM	Price Field Office RMP	Within 0.5 mile of known Mexican spotted owl nests	No surface occupancy.	The BLM Authorized Officer can except, modify, or waive surface stipulations. BLM will coordinate as needed with the appropriate agency or entity. A holder of a land-use authorization document can be excepted from the stipulation on a one-time basis. A modification can be a change in the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently excepts the surface stipulation.
BLM	Richfield Field Office RMP	If project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is temporary or permanent. (Note: Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season,	Temporary: If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey: ▪ If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season. ▪ Eliminate access routes created by a project through such means as raking out scars, revegetation, gating access points, etc. For all	None

TABLE J-16 NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
		leaving no permanent structures and resulting in no permanent habitat loss. Permanent activities continue for more than one breeding season and/or cause a loss of owl habitat or displace owls through disturbances [e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line]).	permanent actions that may affect owls or suitable habitat ■ Permanent: Survey two consecutive years for owls according to established protocol prior to commencing of activity. ■ If owls are found, no actions will occur within 0.5 mile of identified nest site. ■ If nest site is unknown, no activity will occur in the designated protected activity center. ■ Avoid placing permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied. ■ Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 A-weighted decibels at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach on a 0.5-mile buffer for suitable habitat, including canyon rims. ■ Limit disturbances to and in suitable owl habitat by staying on designated routes. ■ Limit new access routes created by the project. Prior to ground-disturbing activities in Mexican spotted owl protected activity centers, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion.	
Mountain Plover				
BLM	Little Snake Field Office RMP	Within 0.125 mile around all plover nest sites	No surface occupancy stipulations. The boundaries of the stipulated area may be modified if the Authorized Officer determines that surface occupancy will not harm the integrity of the nest or nest location. Implement controlled-surface	None

TABLE J-16 NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			use and timing stipulation during breeding season.	
Southwestern Willow Flycatcher				
BLM	Moab Field Office RMP	Within 300 feet of suitable riparian habitat	Activities will maintain a 300-foot buffer from suitable riparian habitat year long.	**Exception**: An exception may be granted by the Field Manager if authorization is obtained from FWS (through applicable provisions of the Endangered Species Act [ESA]). The Field Manager also may grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, will not impair the primary constituent element determined necessary for the survival and recovery of the southwestern willow flycatcher, and FWS concurs with this determination. **Modification**: The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates, and FWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as southwestern willow flycatcher habitat. **Waiver**: May be granted if the southwestern willow flycatcher is de-listed and if FWS determines it is not necessary for the survival and recovery of the southwestern willow flycatcher.
Western Yellow-billed Cuckoo				
BLM	Little Snake Field Office RMP	Within 0.25 mile of any suitable yellow-billed cuckoo habitat	Prohibit permanent ground-disturbing activities (no surface occupancy)	Exceptions should be evaluated on a case-by-case basis to avoid adverse impacts.
BLM	Moab Field Office RMP	Within 100 meters of yellow-billed cuckoo habitat	No ground-disturbing activities will be conducted within 100 meters of yellow-billed cuckoo habitat (riparian areas) from May 15 through July 20.	**Exception**: An exception may be granted by the Field Manager if authorization is obtained from FWS (through applicable provisions of the ESA). The Field Manager also may grant an

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS
FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
				exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, will not impair the primary constituent element determined necessary for the survival and recovery of the yellow-billed cuckoo.
Big Game				
Elk				
BLM	Grand Junction Field Office RMP	Elk calving areas	Prohibit surface disturbance in these areas year round. The decision to protect habitats by placing stipulation on disturbance type activities will be implemented by comparing activities proposed with areas identified for protective management. Applicable stipulations will be placed on projects that lie in the protected areas.	None
Bighorn Sheep				
BLM	Moab Field Office RMP	In desert bighorn lambing grounds and migration corridors	No ground-disturbing activities are allowed	**Exception**: In migration corridors, pipeline and road construction and geophysical exploration for oil and gas development would be allowed from June 16 through October 14 and from December 16 through March 31. The Field Manager also may grant an exception if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification**: The Field Manager may modify the boundaries of the stipulation area if a portion of the area is (1) not being used as desert bighorn lambing grounds or migration corridors (2) if habitat is being utilized outside of stipulation boundaries for and needs to be protected. **Waiver**: A waiver may be granted if the habitat is determined as unsuitable for lambing or

TABLE J-16 NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				migration and there is no reasonable likelihood of future use as desert bighorn lambing and/or rutting grounds and migration corridors.
Raptors				
Active Nests				
CPW	Colorado Division of Wildlife Raptor Guidelines 2008	Within 0.25 mile of active raptor nests	No surface occupancy	With the exception of the species listed specifically identified in plan
BLM	Rawlins Field Office RMP	Within 825 feet of active raptor nests	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed. Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	None
BLM	Little Snake Field Office RMP	Within 0.25 mile of raptor nests	No surface occupancy	The no surface occupancy area could be altered depending on the active status of the nest site or on the geographical relationship of topographical barriers and vegetation screening to the nest site.
BLM	Moab Field Office RMP	In the spatial buffer of active raptor nest	Land use activities that would have an adverse impact on an occupied raptor nest, would not be allowed	None
Raptor Nests – Listed and Candidate Threatened/Endangered Species, Bureau of Land Management Sensitive Species				
BLM	White River Field Office RMP	Within 0.25 mile of identified nests	No surface occupancy	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.
Raptor Nests – Other Than Special Status Raptors				
BLM	White River Field Office RMP	Within 0.125 mile of identified nests	No surface occupancy	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Bald Eagle Nocturnal Roosts, Concentration Areas and Nests				
BLM	Little Snake Field Office RMP	Within a 0.25-mile radius of roost sites and both occupied and unoccupied nests	Year-round no surface occupancy will be applied	None
BLM	Little Snake Field Office RMP	Within 100-meter radius of abandoned nests	No surface occupancy within a 100-meter radius of abandoned nests (unoccupied for 5 consecutive years, but with all or part of the nest remaining)	None
BLM	Little Snake Field Office RMP	Winter conservation areas	Prohibit any activity on BLM lands that has the potential to kill perch trees or impede use of foraging areas.	None
BLM	White River Field Office RMP	Bald eagle roost/concentration areas within 0.25 mile of designated features	No surface occupancy	Exceptions, modifications, or waivers to this no surface occupancy stipulation may be granted by the Area Manager.
BLM	Moab Field Office RMP	Within 1.0 mile of bald eagle nest sites or within 0.5 mile of bald eagle winter concentration areas	No permanent infrastructure. Permanent activities continue for more than one breeding season and/or cause a loss of habitat or displace individuals through disturbance (e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line).	None
BLM	Moab and Richfield Field Office RMP	Bald eagle conservation measures	Power lines will be built to standards and guidelines identified by the Avian Protection Plan Guidelines.	None
BLM	Richfield Field Office RMP	Within 1 mile of bald eagle nest sites or within 0.5 mile of bald eagle winter concentration areas (roosts)	No permanent structures	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS
FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Golden Eagle				
BLM	Moab Field Office RMP	Golden eagle nest sites and territories	No ground-disturbing activities will be allowed within a 0.5-miles radius of documented golden eagle nest sites in nesting territories from February 1 to July 15 or until fledgling and dispersal of young. Any access created by the action will be outside of nesting season and will be eliminated once action is complete.	**Exception**: An exception may be granted by the Field Manager if authorization is obtained from FWS and Utah Division of Wildlife Resources. The Field Manager also may grant an exception if an environmental analysis indicates that the nature or the conduct of the actions, as proposed or conditioned, will not impair the primary constituent element determined necessary for the survival and recovery of the golden eagle. **Modification**: The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates and FWS and Utah Division of Wildlife Resources determine a portion of the area is not being used as golden eagle nesting territories. **Waiver**: A waiver may be granted if an individual golden eagle nest has been inactive (unoccupied) for at least a period of 3 years. Nest-monitoring data for a 3-year period will be required before the waiver could be granted.
Ferruginous Hawk				
CPW	Colorado Division of Wildlife Raptor Guidelines 2008	Within 0.5 mile of ferruginous hawk nests	No surface occupancy	None
BLM	Rawlins Field Office RMP	Within 1,200 feet of active ferruginous nests	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed. Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Mexican Spotted Owl				
BLM	Little Snake Field Office RMP	All protected activity centers	No surface occupancy will be applied	None
BLM	Moab Field Office RMP	Within 0.5 mile of an identified site; in the designated current and historic protected activity center.	If owls are found, no disturbing actions will occur within 0.5 mile of an identified site. If nest site is unknown, no activity will occur in the designated current and historic protected activity center.	None
Northern Goshawk				
CPW	Colorado Division of Wildlife Raptor Guidelines 2008	Within 0.5 mile of northern goshawk nests	No surface occupancy	None
Red-tailed Hawk				
CPW	Colorado Division of Wildlife Raptor Guidelines 2008	Within 0.33 mile of red-tailed hawk nests	No surface occupancy	None
Peregrine Falcon				
CPW	Colorado Division of Wildlife Raptor Guidelines 2008	Within 0.5 mile of peregrine falcon nests	No surface occupancy	None
BLM	Little Snake Field Office RMP	Within a 0.25 mile radius of cliff nesting complexes	No surface occupancy will be allowed.	No surface occupancy areas may be altered depending on the active status of the nesting complex or on the geographical relationship of topographical barriers and vegetation screening.
Prairie Falcon				
CPW	Colorado Division of Wildlife Raptor Guidelines 2008	Within 0.5 mile of prairie falcon nests.	No surface occupancy	None

TABLE J-16
NO SURFACE OCCUPANCY AND NO SURFACE DISTURBANCE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Waterfowl				
Waterfowl and Shorebird Significant Production Areas				
BLM	Little Snake Field Office RMP	Waterfowl habitat management areas and rookeries	No surface occupancy will be allowed on significant production areas, such as waterfowl habitat management areas and rookeries.	No surface occupancy areas may be altered, depending on the active status of the production areas or on the geographical relationship of topographical barriers and vegetation screening.
BLM	Salt Lake Field Office RMP	In waterfowl habitat (i.e., marsh and wetland areas)	BLM will protect important wildlife habitat values from disturbing activities by restricting seismic work, well development, new road construction, rights-of-way, and other disturbing activities, excluding maintenance activities.	Specific exceptions may be granted by BLM if the proposed activity will not seriously disturb the wildlife habitat values being protected.

SOURCES: Bureau of Land Management 1987; 2008b, c, d, e; 2011d; 2012e; Colorado Parks and Wildlife 2008

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES
FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Wetlands and Riparian Areas				
Bureau of Land Management (BLM)	Rawlins Field Office Resource Management Plan (RMP)	▪ Identified 100-year floodplains; ▪ areas within 500 feet of perennial waters, springs, and wetland and riparian areas; and ▪ areas within 100 feet of the inner gorge of ephemeral channels.	Ground-disturbing activities will be avoided.	Exceptions to this will be granted by the BLM based on an environmental analysis and site-specific engineering and mitigation plans. Only those actions in areas that cannot be avoided and that provide protection for the resource identified will be approved.
BLM	Grand Junction Field Office RMP	Palisade and Grand Junction municipal watersheds and the Jerry Creek Reservoirs	Limit ground-disturbing activities	None
BLM	Salt Lake Field Office RMP	Within 1,200 feet of riparian/aquatic habitats	Avoid to the maximum extent possible: Lands within 1,200 feet of riparian/aquatic habitats.	Specific exceptions may be granted by BLM if the proposed activity will not seriously disturb the wildlife habitat values being protected.
Soils				
BLM	White River Field Office RMP	Fragile soils on slopes greater than 35 percent and saline soils derived from Mancos shale	Ground-disturbing activities will be allowed in these areas only after an engineered construction/reclamation plan is submitted by the operator and approved by the Field Manager. The following items must be addressed in the plan: ▪ how soil productivity will be restored; and ▪ how surface runoff will be treated to avoid accelerated erosion such as riling, gullying, piping, and mass wasting.	**Exception**: An exception may be granted by the Field Manager if an environmental analysis of the proposed action identifies that the scale of the operation would not result in any long-term decrease in site productivity or increased erosion. An exception also may be granted by the Field Manager if a more detailed soil survey determines that soil properties associated with the disturbance do not meet fragile soil criteria. **Modification**: None. **Waiver**: None.
BLM	Price Field Office RMP	Slopes between 20 and 40 percent	In ground-disturbing proposals regarding construction on slopes of 20 percent to 40 percent, include an approved erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly	**Exception**: If after an environment analysis the Authorized Officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives; surface

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance.	occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan must include: ▪ An erosion control strategy ▪ Geographic Information System modeling ▪ Proper survey and design by a certified engineer. **Modification**: Modifications also may be granted if a more detailed analysis, e.g., Order I soil survey conducted by a qualified soil scientist, finds that surface disturbance activities could occur on slopes between 20 and 40 percent while adequately protecting areas from accelerated erosion. **Waiver**: None
BLM	Rawlins Field Office RMP		Avoid construction with frozen material or during periods when the soil material is saturated or when watershed damage is likely to occur.	Exception, waiver, or modification of this limitation may be approved in writing, including documented supporting analysis, by the Authorized Officer.
Special Status Plants				
Rare Plant and Rare Plant Community Occurrences in Natural Systems				
BLM	Little Snake Field Office RMP	Rare plant and rare plant community in Limestone Ridge and Lookout Mountain	Avoidance areas for ground-disturbing activities: All disruptive activities will be delayed until specific protective measures are developed and implemented, if appropriate.	BLM
BLM	Grand Junction Field Office RMP	Significant known sites	The decision to protect habitats by placing stipulations on disturbance type activities will be implemented by comparing activities	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			proposed with areas identified for protective management. Applicable stipulations will be placed on projects that lie in the protected areas.	
		Clay Phacelia		
U.S. Forest Service (USFS)/U.S. Fish and Wildlife Service (FWS)	Clay phacelia conservation measures	Within 200 feet of suitable habitat	No mechanical vegetation treatments	None
USFS/FWS	Clay phacelia conservation measures	Within 650 feet of suitable habitat	No construction of roads or disturbance from construction of poles, pads, towers, and other permanent features	If avoidance of suitable habitat is not possible, cumulative disturbance will not exceed 10 percent. Mitigation measures will be necessary for any disturbance in clay phacelia suitable habitat. The following measures will also be followed for any disturbance in clay phacelia suitable habitat: ▪ Clearance surveys should be conducted following the development of the construction footprint and prior to construction to determine species presence. ▪ All project employees, especially contractors, brought onsite for the duration of a project will be informed of the occurrence of clay phacelia in the project area and of the endangered status of the species. All project employees shall be advised as to the potential penalties (up to $200,000 in fines and one year in prison) for

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
				damaging, destroying or removing and possessing a plant species on federal lands listed under the Act. A qualified biologist is required to perform this instruction. ▪ A qualified botanist should be onsite during all ground-disturbing activities to ensure plants are identified and avoided in suitable habitat. If any activity, development, or ground disturbance (even if temporary) occurs in clay phacelia modeled habitat, the following measures shall be considered: ▪ Acquisition of occupied habitat and placement into permanent conservation ▪ Successful introduction of clay phacelia into new sites on USFS land (up to 5 sites where presence of flowering adults occurs for a period of 5 years) ▪ Fencing of existing and suitable sites to protect from herbivores ▪ Contribution to a fund for ongoing management of populations and protection (e.g., fencing, caging, control of herbivores) of occupied habitat The following measures will be considered and weighted into the final mitigation calculation: ▪ Amount of modeled habitat disturbed and proximity to occupied habitat ▪ Type of disturbance: permanent

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
				development, temporary development, temporary construction activity, intermittent activity ▪ Amount of time of disturbance: 1 month or less, up to 6 months, up to 1 year, more than 1 year or continuous ▪ Habitat fragmentation: Location and spacing of transmission lines from each other and other development.
USFS/FWS	Clay phacelia conservation measures	Within 2,500 feet of suitable habitat	No on-the-ground herbicide treatments. No aerial herbicide treatments.	None
USFS/FWS	Clay phacelia conservation measures	In clay phacelia suitable habitat	No ground disturbance from the stringing of wire between towers. Wire should be strung between towers aerially. A vegetation management plan should be developed that outlines methods for control of invasive, exotic species in greater detail while protecting clay phacelia and its habitat. A wildfire mitigation plan should be developed to prevent suitable habitat from being affected by emergency fire operations in the event of a wildfire. All equipment should be cleaned and inspected for presence of invasive, nonnative plants and seeds before being brought in suitable habitat.	None
Jones' Cycladenia				
BLM	Moab Field Office RMP	Potential, suitable, and occupied habitat. Potential, suitable, and occupied habitat are defined as follows:	Current avoidance and minimization measures include the following: ▪ Pre-project habitat assessments will be completed across 100 percent of the	None

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
		Potential habitat is defined as areas that satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment. Suitable habitat is defined as areas that contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in the *Federal Register* Notice and species recovery plan links at http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1V7. Occupied habitat is defined as areas currently or historically known to support clay reed-mustard; synonymous with known habitat.	project disturbance area in potential habitat prior to any ground-disturbing activities to determine if suitable Jones cycladenia habitat is present. ▪ Site inventories will be conducted in suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, avoidance areas); in such cases, in general, 300-foot buffers will be maintained between surface disturbance and avoidance areas. However, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of the habitat. Where conditions allow, inventories: • Must be conducted by qualified individual(s) and according to BLM- and FWS-accepted survey protocols; • Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and in the same growing season, at a time when the plant can be detected (usually May 15 to June 30, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower); • Will occur within 300 feet from the centerline of the proposed right-of-way	

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			for surface pipelines or roads; and within 300 feet from the perimeter of disturbance for the proposed well pad including the well pad; • Will include, but not be limited to, plant species lists and habitat characteristics; and • Will be valid until May 1 the following year. ▪ Design project infrastructure to minimize impacts in suitable habitat: • Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300-foot buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat; • Reduce well pad size to the minimum needed, without compromising safety; • Where technically and economically feasible, use directional drilling or multiple wells from the same pad; • Limit new access routes created by the project; • Roads and utilities should share common rights-of-way where possible; • Reduce the width of rights-of-way and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road in habitat;	

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			• Place signing to limit off-road travel in sensitive areas; • Stay on designated routes and other cleared/approved areas; and • All disturbed areas will be revegetated with native species comprised of species indigenous to the area and nonnative species that are not likely to invade other areas. ▪ In occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts on populations and to individual plants: • Follow the above recommendations for Project design in suitable habitats; • To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged; • Construction of roads will occur such that the edge of the right-of-way is at least 300 feet from any plant and 300 feet from avoidance areas; • Roads will be graveled in occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from May 15 to June 30 (flowering period); dust abatement applications will be comprised of water only;	

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			• The edge of the well pad should be located at least 300 feet away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat; • Surface pipelines will be laid such that a 300-foot buffer exists between the edge of the right-of-way and plants and 300 feet between the edge of right-of-way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don’t move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat; • Construction activities will not occur from May 15 through June 30 in occupied habitat; • Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.; • Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat; and • Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.	

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			▪ Occupied Jones cycladenia habitats within 300 feet of the edge of the surface pipelines' rights-of-way, 300 feet of the edge of the roads' rights-of-way, and 300 feet from the edge of the well pad shall be monitored for a period of 3 years after ground-disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and FWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the FWS. ▪ Reinitiation of Section 7 consultation with the FWS will be sought immediately if any loss of plants or occupied habitat for the Jones' cycladenia is anticipated as a result of project activities. Additional site-specific measures also may be employed to avoid or minimize effects on the species. These additional measures will be developed and implemented in consultation with the FWS to ensure continued compliance with the Endangered Species Act (ESA).	
Ute Ladies'-tresses				
BLM	Little Snake Field Office RMP	0.25 miles from any known Ute ladies'-tresses orchid habitat	All proposed right-of-way projects (power lines, pipelines, roads, etc.) will be designed and locations selected to minimize disturbances. If avoidance of adverse effects	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			is not possible, the BLM will re-initiate consultation with the FWS.	
BLM	Little Snake Field Office RMP	In occupied or suitable habitat	Ground-disturbing activities would be preceded by a current year survey and a separate Section 7 consultation.	None
BLM	Richfield Field Office RMP	Occupied Ute ladies'-tresses habitats within 300 feet of the edge of the surface pipelines' rights-of-way, 300 feet of the edge of the roads' rights-of-way, and 300 feet from the edge of the well pad	Occupied habitat shall be monitored for a period of 3 years after ground-disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Habitat impacts include monitoring any changes in hydrology due to Project-related activities. Annual reports shall be provided to the BLM and FWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and FWS.	None
Special Status Wildlife Species				
BLM	Grand Junction Field Office RMP	Standard designs for power line projects	Structure holes left open overnight shall be covered. Covers shall be secure and strong enough to prevent livestock or wildlife from falling into holes.	None
BLM	Grand Junction Field Office RMP	Standard designs for power line projects	Holder shall not blade or excavate to prepare a structure framing pad. If a structure cannot be framed on the natural ground, aerial framing or offsite framing will be necessary.	None
BLM	Little Snake Field Office RMP	All special status wildlife	▪ Minimize width of field surface roads. ▪ Avoid engineered and graveled roads when possible to reduce the footprint. ▪ Reduce the long-term footprint of facilities to the smallest practical space.	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			▪ Design and construct roads to minimize duplication of them. ▪ Cluster development of roads, pipelines, electric lines, and other facilities, and use existing, combined corridors where possible.	
BLM	Richfield Field Office RMP	Standard designs for power line projects	▪ Ensure rights-of-way and utility corridors use areas adjoining or adjacent to previously disturbed areas whenever possible. • Stabilize disturbed areas in road rights-of-way and utility corridors with vegetation practices designed to hold soil in place and minimize erosion. Re-establish vegetation cover to increase infiltration and provide additional protection from erosion. • Construct sediment barriers when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Straining or filtration mechanisms also may be employed for the removal of sediment from runoff.	None
BLM	Fillmore Field Office (House Range RMP)	Terms for siting in existing right-of-way corridors	▪ Transmission line rights-of-way shall be adjacent to each other or as close as possible. ▪ Existing transmission line access roads shall be used, and only the roads to new tower sites shall be constructed for new rights-of-way.	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
BLM	Salt Lake Field Office RMP	Standard designs for power line projects	Rights-of-way, whether inside or outside a corridor, will avoid the following areas to the maximum extent possible: ▪ Lands within 0.5 mile of sage grouse strutting grounds if the disturbance would adversely affect the effectiveness of the lek. ▪ Lands within 1,200 feet of riparian/aquatic habitats. ▪ Lands in Visual Resource Management Class II and III areas. ▪ Lands in wilderness study areas. ▪ Lands where an above-ground right-of-way would be an obvious visual or physical intrusion such as ridge tops or narrow drainages. ▪ Lands with slopes greater than 30 percent. ▪ Lands with known or suspected hazardous materials. In addition, construction activities would not be allowed in the crucial seasons and habitats for mule deer, elk, pronghorn, bald eagles, and other raptors.	Exceptions may be permitted based on consideration of the following criteria: ▪ a type and need for facility proposed and economic impact of facility; ▪ conflicts with other resource values and uses; and ▪ availability of alternative routes and/or mitigation
Black-footed Ferret				
BLM	Rawlins Field Office RMP	Within 164 feet (50 meters) of a prairie dog town	If prairie dog towns/complexes suitable as black-footed ferret habitat are present, attempts will be made to avoid locating ground-disturbing activities.	None
BLM	Little Snake Field Office RMP	Active white-tailed prairie dog colonies in the black-footed ferret reintroduction area.	Avoidance areas for ground-disturbing activities. Rights-of-way on public land with the potential to disturb occupied black-footed ferret habitat will be rerouted to avoid those prairie dog towns.	None

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
BLM	Little Snake Field Office RMP	Prairie dog towns	Rights-of-way on public land with the potential to disturb occupied black-footed ferret habitat will be rerouted to avoid those prairie dog towns.	None
BLM	Little Snake Field Office RMP	Potential habitat	In areas where black-footed ferret occupancy is suspected or where surveys have not cleared the area, spotlighting surveys would be required prior to ground-disturbing activities.	None
BLM	Little Snake Field Office RMP	Occupied black-footed ferret habitat	Avoidance areas for new rights-of-way	None
BLM	White River Field Office RMP	Ferret reintroduction area	Prior to authorizing activities in this area, the Area Manager will confer or consult with the FWS as required by Section 7 of the ESA. Depending on the scope of the proposed action, a plan of development may be required that demonstrates how the proposed activities would be conducted or conditioned to: ▪ avoid the direct or indirect loss of black-footed ferrets; or ▪ avoid affecting the capability of the site to achieve re-establishment objectives. The Area Manager may impose land use measures and limitations derived from a site specific ferret reintroduction and management plan. The measures and limitations would be designed to avoid, or reduce to acceptable levels, the short and long-term adverse effects on ferret survival, behavior, reproductive activities, and/or the area's capacity to sustain ferret population objectives. Examples of measures and limitations include: ▪ relocation of surface 'activities more than 200 meters;	**Exception:** The Area Manager may authorize surface disturbance or use in these areas if an environmental analysis, and associated biological assessment, finds that the activity as proposed of conditioned, would not adversely influence ferret recovery, or conflict with the ferret reintroduction and conditioned, would not adversely influence ferret recovery, or conflict with the ferret reintroduction and management plan. **Modification:** The Area Manager may modify the terms of the controlled-surface use if the proposed action is shown to be compatible with ferret recovery goals and/or, the ferret reintroduction and management plan. **Waiver:** The Area Manager may grant a waiver if extirpation of wild, free roaming ferret populations culminates in the discontinuance of the species recovery program, or local reintroduction efforts are otherwise abandoned.

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			▪ deferring activities longer than 60 days; ▪ limiting access to designated roads and trails; ▪ modifications to project design to discourage raptor perching and prohibit the disruption of certain or all prairie dog burrow systems; ▪ limit surface disturbance to certain seasons and times of day; and ▪ require participation in ferret surveys and/or efforts to offset loses of, or expand suitable prairie dog habitats to compensate for unavoidable habitat loss or adverse habitat modification.	
White-tailed Prairie Dog				
BLM	Rawlins Field Office RMP	In white-tailed and black-tailed prairie dog towns	Ground-disturbing and disruptive activities will be avoided.	None
BLM	Rawlins Field Office RMP	In prairie dog towns	Placement of power poles will be avoided; however, in the event that power poles are required to be placed in these towns, raptor anti-perch devices will be required.	None
BLM	White River Field Office RMP	Prairie dog towns	Lands in this lease parcel involve prairie dog ecosystems that constitute potential habitat for wild or reintroduced populations of the federally endangered black-footed ferret. Conservation and recovery efforts for the black-footed ferret are authorized by the ESA (as amended). The successful lessee may be required to perform special conservation measures prior to and during lease development. These measures may include one or more of the following: ▪ Performing site-specific habitat analysis and/or participating in ferret surveys.	None

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			▪ Participating in the preparation of a surface use plan of operations with BLM, FWS, and Colorado Division of Wildlife, which integrate and coordinate long-term lease development with measures necessary to minimize adverse impacts on black-footed ferrets or their habitat. ▪ Abiding by special daily and seasonal activity restrictions on construction, drilling, product transport, and service activities. ▪ Incorporating special modifications to facility siting, design, construction, and operation. ▪ Providing in-kind compensation for habitat loss and/or displacement (e.g., special onsite rehabilitation/revegetation measures or offsite habitat enhancement).	
Colorado River Fishes				
BLM	White River Field Office RMP	Colorado River cutthroat trout habitat	This is a controlled-surface use area for protecting aquatic habitats occupied by candidate populations of Colorado River cutthroat trout. Prior to authorizing surface disturbance of occupied stream reaches or in watersheds contributing to occupied habitats, the Area Manager may require the Applicant to submit a plan of development that would demonstrate that the proposed action would not: ▪ increase stream gradient; ▪ result in a net increase in sediment contribution; ▪ decrease stream channel sinuosity; ▪ increase the channel width to depth ratio;	**Exception**: The Area Manager may authorize surface disturbance in these areas if an environmental analysis indicates that the project would have no adverse influence on identified stream characteristics. **Modification**: Short-term transgressions of the stream characteristics listed above may be allowed if the Area Manager determines, through environmental analysis, that short-term deviations will have no adverse consequences on affected channel reaches beyond the construction phase of the project. **Waiver**: In the event the population status of Colorado River cutthroat trout

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			▪ increase water temperature; ▪ decrease vegetation derived stream shading; and ▪ degrade existing water quality parameters, including specific conductance, turbidity, organic/inorganic contaminant levels, and dissolved oxygen in occupied reaches or contributing perennial or intermittent tributaries. If approvals are granted and development results in these standards being exceeded, additional measures would be required to correct the deficiencies. The Applicant may be required to monitor stream/channel responses throughout the life of the project.	warrants downgrading, this stipulation may be replaced by less stringent criteria.
BLM	Little Snake Field Office RMP	All new pipelines and other controlled-surface uses crossing any critical or occupied habitat of the Colorado River fishes	Controlled-surface uses crossing any critical or occupied habitat of the Colorado River fishes will require separate Section 7 consultation.	None
BLM	Little Snake Field Office RMP	All new pipelines and other controlled-surface uses crossing any critical or occupied habitat of the Colorado River fishes	After construction, the stream bed will be returned to preconstruction contours	None
BLM	Moab and Richfield Field Office RMP	Within 0.25 mile of the channel centerline of the Colorado, Green, Duchesne, Price, White, and San Rafael rivers	Ground-disturbing activities will be restricted.	None
BLM	Moab Field Office RMP	In floodplains or riparian areas	Ground-disturbing activities will be avoided unless there is no practical alternative or the development would enhance riparian/aquatic values. If activities must occur in these areas, construction will be designed to include mitigation efforts to maintain, restore, and/or improve riparian and aquatic conditions. If	None

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			conditions could not be maintained, offsite mitigation strategies should be considered.	
Columbian Sharp-tailed Grouse				
BLM	Rawlins Field Office RMP	Within 0.25 to 1 mile of an occupied sharp-tailed grouse lek	High-profile structures (e.g., buildings, storage tanks, overhead power lines, wind turbines, towers, windmills) will be authorized on a case-by-case basis.	None
Greater Sage-grouse				
State of Wyoming	Executive Order for Greater Sage-grouse in Wyoming, 2011	Suitable sage-grouse habitat	Surface disturbance will be limited to 5 percent of suitable sage-grouse habitat per an average of 640 acres in core areas. The density of disturbance calculation tool process will be used to determine the level of disturbance. Distribution of disturbance may be considered and approved on a case-by-case basis. Unsuitable habitat should be identified in a seasonal and landscape context, on a case-by-case basis, outside the 0.6-mile buffer around leks in core areas.	**Exceptions**: Any exceptions to these general or specific stipulations will be considered on a case by case basis and must show that the exception will not cause declines in sage-grouse populations. No exception is needed within transmission corridors designated in Executive Order 2011-5
Colorado Parks and Wildlife (CPW)	Colorado Greater Sage-grouse Conservation Plan	Lek habitat	Power lines (transmission, service lines) – Whenever possible, avoid the construction of power lines in lek habitat. If impractical, power lines in lek habitat should be retro-fitted to deter raptor perching. If practical, power lines should be constructed to reduce the likelihood of grouse-wire collisions. Similar adjustments should be applied to existing power lines where grouse mortality issues have been identified. Roads and Trails – Avoid constructing roads and trails in lek habitat. If unavoidable, roads should be placed so they, and their associated traffic, are not in direct line-of-sight of strutting males. Vehicles should not exceed 30	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			to 40 mph during the strutting period to avoid grouse-vehicle collisions. Roads should be minimally developed and seasonal closures should be developed.	
CPW	Colorado Greater Sage-grouse Conservation Plan	Breeding habitat – nesting and early brood-rearing habitat, summer-fall habitat, and winter habitat	Power lines – If possible, power lines should be avoided in these seasonal habitats. If not possible, consider burying power lines, placing raptor perching deterrents, and avoiding areas where sage-grouse concentrate, riparian areas, or areas where collisions or predatory events from perching raptors have been documented. Roads and Trails – Vehicles should not exceed 30 to 40 mph on local or unpaved roads.	None
State of Utah	Conservation Plan for Greater Sage-grouse in Utah, 2013	Transmission corridors	▪ Apply mitigation standards based on habitat type as discussed in the Management Protocol, and best management practices accepted by industry and state and federal agencies. ▪ For electrical transmission lines, and where feasible and consistent with federally required electrical separation standards, site new linear transmission features in existing corridors, or at a minimum, in concert with existing linear features in greater sage-grouse habitat. Siting linear features accordingly shall be deemed to be mitigation for the siting.	None
State of Utah	Conservation Plan for Greater Sage-grouse in Utah, 2013	Nesting and brood-rearing area (i.e., habitat within a 3-mile radius of the lek; and winter habitat; and other habitat [Note: Other habitat refers to habitat in sage-grouse	▪ Avoid disturbance in nesting and brood-rearing area, if possible. The Applicant must demonstrate why avoidance is not possible.	None

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
		management areas that is not part of the lek, nesting, or wintering areas).	▪ If avoidance is not possible, use minimization as appropriate in the nesting and brood-rearing area. ▪ If minimization is not sufficient, mitigation is required. Mitigation should be calculated at a minimum of a 4:1 ratio starting with the first acre disturbed. Mitigation must produce lands capable of supporting sage-grouse as habitat before the proposed disturbance occurs, though birds do not need to be using the mitigated area. The Applicant of the disturbance must demonstrate that the conditions have been met. ▪ Cumulative new permanent disturbance in the sage-grouse management area should not exceed 5 percent of the spatial extent of the nesting habitat in the sage-grouse management area. Allowances must be made to include the temporal effects of any temporary disturbance, if any such effects are expected.	
BLM	Rawlins Field Office RMP	Within 0.25 mile to 1.0 mile of an occupied greater sage-grouse lek	High-profile structures (e.g., buildings, storage tanks, overhead power lines, wind turbines, towers, windmills) will be authorized on a case-by-case basis.	None
BLM	Vernal Field Office RMP	Within 0.5 mile of known active leks	The best available technology will be used to reduce noise (e.g., installation of multi-cylinder pumps, hospital sound-reducing mufflers, and placement of exhaust systems).	None
BLM	Fillmore Field Office RMP	Within 2.0 miles of active sage-grouse strutting ground	Sagebrush manipulation will be prohibited in that zone and a seasonal off-highway vehicle restriction will be implemented.	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Mexican Spotted Owl				
BLM	Vernal Field Office RMP	If owls are found, no actions will occur within 0.5 mile of identified nest site. If nest site is unknown, no activity will occur in the designated protected activity center.	For all permanent actions that may affect owls or suitable habitat, survey two consecutive years for owls according to accepted protocol prior to commencing activities. Avoid drilling and permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied.	BLM
BLM	Moab Field Office RMP	Mexican spotted owl protected activity centers, breeding habitat, or designated critical habitat	▪ BLM will place restrictions on all authorized (permitted) activities that may adversely affect the Mexican spotted owl in identified protected activity centers, breeding habitat, or designated critical habitat to reduce the potential for adverse impacts on the species. Restrictions and procedures have been adapted from guidance published in the *Utah Field Office Guidelines for Raptor Protection from Human and Land-use Disturbances*, as well as coordination between the BLM and FWS. Measures include: • Surveys, according to FWS protocol, will be required prior to any disturbance-related activities that have been identified to have the potential to affect Mexican spotted owl, unless current species' occupancy and distribution information is complete and available. All surveys must be conducted by FWS certified individuals and approved by the BLM Authorized Officer. • Assessment of habitat suitability for both nesting and foraging using	**Exception:** An exception may be granted by the Field Manager if authorization is obtained from FWS (through applicable provisions of the ESA). The Field Manager also may grant an exception if an environmental analysis indicates the nature or the conduct of the actions would not impair the primary constituent element determined necessary for the survival and recovery of the Mexican spotted owl and FWS concurs with this determination. **Modification:** The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates and FWS (through applicable provisions of the ESA) determines a portion of the area is not being used as critical habitat. **Waiver:** A waiver may be granted if the Mexican spotted owl is de-listed and the Critical Habitat is determined by FWS as not necessary for the survival and recovery of the Mexican spotted owl.

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if Project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is: ○ **Temporary:** activities completed prior to the start of the following raptor breeding season, leaving no permanent structures, and resulting in no permanent habitat loss. ○ **Permanent:** activities that continue for more than one breeding season and/or cause a loss of owl habitat or displaces owls through disturbances (e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line). **For all temporary actions that may affect owls or suitable habitat:** • If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey. • If action will occur during a breeding season, conduct surveys for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season. • Eliminate access routes created by the Project through such means as raking out scars, revegetation, gating access points, etc.	

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			For all permanent actions that may affect owls or suitable habitat: • Survey two consecutive years for owls according to established protocol prior to commencement of activity. • If owls are found, no actions will occur within 0.5 mile of an identified nest site. • If a nest site is unknown, no activity will occur in the designated protected activity center. • Avoid placing permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied. • Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 decibels (A-weighted scale) at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach on a 0.5-mile buffer for suitable habitat, including canyon rims. • Limit disturbances to and in suitable owl habitat by staying on designated routes. • Limit new access routes created by the Project. BLM will, as a condition of approval on any project proposed in identified protected activity centers, designated critical habitat, or within spatial buffers for Mexican spotted owl nests (0.5 mile); ensure the Project Applicant is notified as to their responsibilities for	

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			rehabilitation of temporary access routes and other temporary surface disturbances created by the Project, according to individual BLM field office standards and procedures, or those determined in the Project-specific Section 7 Consultation. ▪ The BLM will require monitoring of activities in designated critical habitat, identified protected activity centers, or breeding habitats where it has been determined there is a potential for take. If any adverse impacts are observed to occur in a manner, or to an extent that was not considered in the Project-specific Section 7 Consultation, then consultation must be reinitiated. ▪ Monitoring results should document what, if any, impacts on individuals or habitat occur during Project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization or mitigation measures. Monitoring results would be considered an opportunity for adaptive management, and as such, would be carried forward in the design and implementation of future projects. ▪ For all survey and monitoring actions: • Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts. • Report any detection of Mexican	

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			spotted owls during survey or monitoring to the Authorized Officer within 48 hours. ▪ The BLM will, in areas of designated critical habitat, ensure that any physical or biological factors (i.e., the primary constituent elements), as identified in determining and designating such habitat, remains intact during implementation of any BLM-authorized activity. ▪ For all BLM actions that may adversely affect the primary constituent elements in any suitable Mexican spotted owl habitat, BLM will implement measures as appropriate to minimize habitat loss or fragmentation, including rehabilitation of access routes created by the Project through such means as raking out scars, revegetation, gating access points, etc. ▪ Where technically and economically feasible, use directional drilling from single drilling pads to reduce surface disturbance and minimize or eliminate needing to drilling in canyon habitats suitable for Mexican spotted owl nesting. ▪ Prior to surface-disturbing activities in Mexican spotted owl protected activity centers, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion. These principles include: • Conduct long-range transportation planning for large areas to ensure roads will serve future needs. This will result	

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			in less total surface disturbance. • Avoid surface disturbance in areas with high erosion hazards to the greatest extent possible. Avoid mid-slope locations, headwalls at the source of tributary drainages, inner valley gorges, and excessively wet slopes such as those near springs. In addition, avoid areas where large cuts and fills would be required. • Locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams. ▪ Project developments should be designed and located to avoid direct or indirect loss or modification of Mexican spotted owl nesting and/or identified roosting habitats. ▪ Water production associated with BLM-authorized actions should be managed to ensure maintenance or enhancement of riparian habitats.	
BLM	Price Field Office RMP	Designated critical habitat	Any surface use or occupancy in designated critical habitat would be strictly controlled through close scrutiny of any surface use plan filed to protect habitat values and the use of the area by Mexican spotted owls. Modifications to the Surface Use Plan of Operations may be required for the protection of these resources. This limitation may apply to operation and maintenance of producing wells.	**Exception**: The Authorized Officer may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities. **Modification**: The Authorized Officer may modify the conditional surface use area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
				or auditory screening. **Waiver**: A waiver may be granted if the species is de-listed and the critical habitat is determined as not necessary for the survival and recovery of the species.
Mountain Plover				
BLM	Rawlins Field Office RMP	Within 0.5 mile of identified mountain plover-occupied habitat	Power lines will be buried or poles will include a perch-inhibitor in their design.	None
BLM	Rawlins Field Office RMP	Within 0.5 mile of identified mountain plover-occupied habitat	Road-killed animals will be promptly removed.	None
Southwestern Willow Flycatcher				
BLM	Moab Field Office RMP	Within a 0.25-mile buffer from suitable riparian habitats; within 0.5 mile of suitable southwestern willow flycatcher habitat	All ground-disturbing activities should be restricted within a 0.25-mile buffer from suitable riparian habitats and permanent surface disturbances should be avoided within 0.5 mile of suitable southwestern willow flycatcher habitat.	None
BLM	Moab Field Office RMP	Southwestern willow flycatcher habitat (riparian areas)	In areas that contain riparian habitat in the range for the southwestern willow flycatcher, actions will be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs inside or outside the nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of habitat or displaces flycatchers through disturbances (i.e., creation of a permanent structure). Current avoidance and minimization measures	**Exception**: An exception may be granted by the Field Manager if authorization is obtained from FWS (through applicable provisions of the ESA). The Field Manager may also grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, will not impair the primary constituent element determined necessary for the survival and recovery of the southwestern willow flycatcher and FWS concurs with this determination. **Modification**: The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates, and FWS (through applicable

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			include the following: ▪ Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s) and be conducted according to protocol. ▪ Activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. ▪ Water production will be managed to ensure maintenance or enhancement of riparian habitat. ▪ Activities will maintain a 300 feet buffer from suitable riparian habitat year long. ▪ Activities within 0.25 mile of occupied breeding habitat will not occur during the breeding season of May 1 to August 15. ▪ Ensure that water extraction or disposal practices do not result in change of hydrologic regime that will result in loss or degradation of riparian habitat. ▪ Revegetate with native species all areas of surface disturbance in riparian areas and/or adjacent land. Additional measures to avoid or minimize effects on the species may be developed and implemented in consultation with the FWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA.	provisions of the ESA) determines that a portion of the area is not being used as southwestern willow flycatcher habitat. **Waiver**: May be granted if the southwestern willow flycatcher is de-listed and if FWS determines it is not necessary for the survival and recovery of the southwestern willow flycatcher.

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
Western Yellow-billed Cuckoo				
BLM	Little Snake Field Office RMP	Current western yellow-billed cuckoo habitat	Construction of roads, pipelines, and power lines through riparian habitat should be placed near the edge of the current yellow-billed cuckoo habitat. Roads, new trails, and rights-of-way should be combined where possible, and stream crossings should be at right angles to yellow-billed cuckoo habitat to minimize impacts.	None
BLM	Little Snake Field Office RMP	Current western yellow-billed cuckoo habitat	To avoid direct impacts on or changes in riparian habitat, do not modify stream channel morphology.	None
Boreal Toad				
BLM	Rawlins Field Office RMP	In known western boreal toad habitat	Any action that would result in stream channel instability, erosion, and sedimentation will be avoided.	None
Big Game				
Mule Deer				
BLM	Vernal Field Office RMP	Deer crucial winter range	No more than 10 percent of such habitat will be subject to surface disturbance and remain un-reclaimed at any given time.	None
Bighorn Sheep				
BLM	Salt Lake Field Office RMP	In bighorn sheep crucial winter and lambing areas	Once these ranges have been established by the reintroduced animals, appropriate dates and crucial habitats will be delineated.	Specific exceptions may be granted by BLM if the proposed activity will not seriously disturb the wildlife habitat values being protected.
Raptors				
Unoccupied Raptor Nests – Other Than Special Status Raptors				
BLM	Moab and Price Field Offices RMPs	In spatial buffer of unoccupied nest	Ground-disturbing activities, occurring outside of the breeding season (seasonal buffer), but in the spatial buffer, would be allowed during a minimum 3-year nest monitoring period, as long as the activity would not cause the nest site to become	None

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			unsuitable for future nesting, as determined by a wildlife biologist. Facilities and other permanent structures would be allowed, if they meet the above criteria.	
Active Nests				
BLM	Grand Junction and White River Field Offices RMPs	Standard designs for power line projects	Unless otherwise agreed upon in writing, power lines shall be constructed according to standards as outlined in *Suggested Practices for Raptor Protection on Power Lines, Raptor Research Foundation, Inc., 1981*. Industry officials shall assume the burden and expense of proving that pole designs not shown in publications are eagle safe. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the BLM.	None
Bald Eagle Nocturnal Roost and/or Concentration Areas				
BLM	Little Snake Field Office RMP	Winter conservation areas	All new power line construction should comply with the Avian Power Line Interaction Committee's publication, *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996* (Edison Electric Institute/Raptor Research Foundation 1996).	None
BLM	White River Field Office RMP	Bald eagle nest, roost, and perch substrate	This is a controlled-surface use area for maintaining the long-term suitability, utility and development opportunities for specialized habitat features involving nest, roost and	**Exception**: The Area Manager may grant an exception to this stipulation if an environmental analysis indicates that the proposed or conditioned activities would

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			perch substrate on federal lands. Prior to authorizing surface disturbance in this area, and pending conferral or consultation with the FWS as required by the ESA, the Area Manager may require the Applicant to submit a plan of development that would demonstrate that: ▪ involvement of cottonwood stands or cottonwood regeneration areas have been avoided to the extent practicable; ▪ special reclamation measures or design features are incorporated that would accelerate recovery and/or re-establishment of affected cottonwood communities; ▪ the predevelopment potential of affected floodplains to develop or support riverine cottonwood communities has not been diminished; and ▪ the current/future utility of such cottonwood substrate for bald eagle use would not be impaired.	not affect the long-term suitability or utility of habitat features or diminish opportunities for natural floodplain functions. Surface disturbance and occupation may indicate that the proposed or conditioned activities would not affect the long-term suitability or utility of habitat features or diminish opportunities for natural floodplain functions. Surface disturbance and occupation also may be authorized in the event that established impacts on habitat values would be compensated or offset to the satisfaction of the BLM in consultation with FWS and CPW. **Modification**: Integral with exception and stipulation **Waiver**: None
BLM	Moab Field Office RMP	Nest sites and winter roost areas in habitat for bald eagles	In areas that contain habitat for the bald eagle, actions will be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs inside or outside the bald eagle breeding or roosting season. A temporary action is completed prior to the following breeding or roosting season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding or	**Exception**: An exception may be granted by the Field Manager if authorization is obtained from FWS (through applicable provisions of the ESA). The Field Manager also may grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, will not impair the primary constituent element determined necessary for the survival and recovery of the bald eagles and FWS and Utah Division of Wildlife Resources (UDWR) concur with

TABLE J-17 CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS				
Agency	**Applicable Plan/Policy**	**Area to Which Restriction Applies**	**Restriction**	**Exception**
			roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances (i.e., creation of a permanent structure). Current avoidance and minimization measures include the following: ▪ 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s), and be conducted according to protocol. ▪ Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated. ▪ Water production will be managed to ensure maintenance or enhancement of riparian habitat. ▪ Temporary activities within 1.0 mile of nest sites will not occur during the breeding season of January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied. ▪ Temporary activities within 0.5 mile of winter roost areas (e.g., cottonwood galleries) will not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied. ▪ No permanent infrastructure will be placed within 1.0 mile of nest sites.	this determination. **Modification**: The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates, and FWS and UDWR (through applicable provisions of the ESA) determine that a portion of the area is not being used as bald eagle nesting territories. **Waiver**: May be granted if bald eagles are de-listed and if FWS and UDWR determine it is not necessary to protect nesting territories according to the ESA and The Bald Eagle Protection Act or if there is no reasonable likelihood of site occupancy over a minimum 10-year period.

TABLE J-17
CONDITIONAL SURFACE USE RESTRICTIONS FOR BIOLOGICAL RESOURCES FROM APPLICABLE BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND OTHER PLANS

Agency	Applicable Plan/Policy	Area to Which Restriction Applies	Restriction	Exception
			▪ No permanent infrastructure will be placed within 0.5 mile of winter roost areas. ▪ Remove big game carrion to 100 feet from on lease roadways occurring in bald eagle foraging range. ▪ Avoid loss or disturbance to large cottonwood gallery riparian habitats. ▪ All areas of surface disturbance in riparian areas and/or adjacent uplands should be re-vegetated with native species.	

SOURCES: Bureau of Land Management 1987; 1990; 2008a, b, c, d, e; 2011d; 2012e; State of Utah 2013

J.10 References

Abate, P. 2015. Personal communication between Paul Abate, U.S. Fish and Wildlife Service biologist, and David Kahrs, EPG Biologist. Summary of June sucker distribution information presented in administrative draft June Sucker Revised Recovery Plan.

Agee, J. K. 2000. Disturbance ecology of North American boreal forest and associated northern mixed/subalpine forests. Pages 39–82 In *Ecology and conservation of lynx in the United States*.

Aldrich, J.W. 1946. New Subspecies of Birds from Western North America. *Proceedings of the Biological Society of Washington* 59:129-136.

Aldrich, J.W. 1963. Geographic Orientation of North American Tetraonidae. *Journal of Wildlife Management* 27:529-545.

Aldrich, J.W. and A.J. Duvall. 1955. *Distribution of American Gallinaceous Game Birds*. U.S. Government Printing Office, Washington, D.C.

Aldridge, C.L. and R.M. Brigham. 2002. Sage-grouse Nesting and Brood Habitat Use in Southern Canada. *Journal Wildlife Management* 66:433-444.

Aldridge, C.L., S.E. Nielsen, H.L. Beyer, M.S. Boyce, J.W. Connelley, S.T. Knick, and M. Schroeder. 2008. Range-Wide Patterns of Greater Sage-grouse Persistence. *Diversity and Distributions* 14:983-994.

Allen, T. 2013. Personal communication between Traci Allen, Bureau of Land Management Biologist, Salt Lake Field Office, and Reid Persing, EPG Biologist, concerning three-toed woodpecker sightings in the Project area in October 2013.

American Ornithologists' Union (AOU). 1998. *Check-list of North American Birds*. 7th edition. American Ornithologists' Union, Washington, D.C.

AmphibiaWeb. 2012. AmphibiaWeb: Information on Amphibian Biology and Conservation. Berkeley, California. Available at: http://amphibiaweb.org/, accessed Fall 2012.

Andersen, A.E. and O.C. Wallmo. 1984. *Odocoileus hemionus*. *Mammalian Species* 219:1-9.

Anderson, J.G.T. 1991. Foraging Behavior of the American White Pelican (*Pelecanus erythrorhyncos*) in Western Nevada. *Colonial Waterbirds* 14(2):166-172.

Andersen, M. E., C. J. Keleher, J.E. Rasmussen, E.S. Hansen, P.D. Thompson, D.W. Spears, M.D. Routledge, and T.N. Hedrick. 2006. Status of June Sucker in Utah Lake and Refuges. Status, distribution, and conservation of native freshwater fishes of western North America: a symposium proceedings. M.J. Brouder and J.A. Scheurer, editors, Symposium 53, Pages 39-58. American Fisheries Society, Bethseda, Maryland.

Anderson, R. 2002. (*Castor canadensis*) American Beaver. Animal Diversity Web. Available at: http://animaldiversity.org/accounts/Castor_canadensis, accessed November 09, 2011.

Arcese, P., M.K. Sogge, A.B. Marr, and M.A. Patten. 2002. Song Sparrow (*Melospiza melodia*). The Birds of North America Online. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Arp, G. 1972. A Revision of *Pediocactus*. *Cactus and Succulent Journal* 44:118-122.

Atwood, J.L. and B.W. Massey. 1988. Site Fidelity of Least Terns in California. *Condor* 90:389-394.

Atwood, N.D. 1975. A Revision of the *Phacelia Crenulatae* Group (*Hydrophyllaceae*) for North America. *Great Basin Naturalist* 35(2):127-190.

Atwood, N.D. and S.L. Welsh. 2007. New Taxa of *Camissonia (Onagraceae)*: *Erigeron, Hymenoxys,* and *Tetradymia* (Compositae); *Lepidium* and *Physaria (Cruciferae)* from Arizona, New Mexico, and Utah. *Rhodora* 109:395-414.

Austin, J.E., C.M. Custer, and A.D. Afton. 1998. Lesser Scaup (*Aythya affinis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Austin, J.E. and M.R. Miller. 1995. Northern Pintail (*Anas acuta*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Autrienth, R.E. 1981. Sage-grouse Management in Idaho. Idaho Department of Fish and Game, Boise.

Arizona Game and Fish Department. 2001. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

Bailey, C.L., K.W. Wilson, and M.E. Andersen. 2005. Conservation Agreement and Strategy for the Least Chub (*Iotichthys phlegethontis*) in the State of Utah. Publication No. 05-24. Utah Division of Wildlife Resources, Salt Lake City.

Bailey, C.L., K.W. Wilson, and M.E. Andersen. 2006. Conservation Agreement and Strategy for Columbia Spotted Frog (*Rana luteiventris*) in the State of Utah. Utah Division of Wildlife Resources, Salt Lake City.

Baker, M.F., R.L. Eng, J.S. Gashwiler, M.H. Schroeder, and C.E. Braun. 1976. Conservation Committee Report on Effects of Alteration of Sagebrush Communities on the Associated Avifauna. *The Wilson Bulletin* 88(1):165-171.

Barbour, R.W. and W.H. Davis. 1969. *Bats of America*. The University Press of Kentucky, Lexington.

Bat Conservation International. 2009a. Species and profiles: Big Brown Bat (*Eptesicus fuscus*). Available at: http://www.batcon.org/resources/media-education/species-profiles, accessed February 17, 2009.

___. 2009b. Species and profiles: *Myotis lucifigus*. Available at: http://www.batcon.org/resources/media-education/species-profiles, accessed February 24, 2009.

___. 2009c. Species and profiles: *Myotis volans*. Available at: http://www.batcon.org/resources/media-education/species-profiles, accessed February 24, 2009.

Bat Conservation International. 2009d. Species and Profiles: Pallid Bat (*Antrozous pallidus*). Available at: http://www.batcon.org/resources/media-education/species-profiles, accessed Februrary 25, 2009.

___. 2009e. Species and profiles: *Myotis ciliolabrum*. Available at: http://www.batcon.org/resources/media-education/species-profiles, accessed February 25, 2009.

Batterson, W.M. and W.B. Morse. 1948. Oregon Sage-grouse. Oregon Fauna Series 1, Oregon Game Commission, Portland.

Beacham, W., F.V. Castronova, and S. Sessine. 2005. Beacham's Guide to the Endangered Species of North America. Available at: http://www.accessmylibrary.com/coms2/summary_0193-8477_ITM, accessed January, 2009.

Beason, J.R., R. Levad, and T. Leukering. 2005. Monitoring Colorado's Birds: The 2004 Field Season Report. Rocky Mountain Bird Observatory, Brighton, Colorado.

Beason, J., R. Sparks, J. Blakesley, C. White, A. Panjabi, and D. Hanni. 2008. Monitoring Colorado’s Birds: 2007 Field Season Report. Rocky Mountain Bird Observatory, Brighton, Colorado.

Bechard, M.J., and J.K. Schmutz. 1995. Ferruginous Hawk (*Buteo regalis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Beck, T.D.I. 1977. Sage-grouse Flock Characteristics and Habitat Selection in Winter. *Journal Wildlife Management* 41:18-26.

Beecham, J.J., C.P. Collins, and T.D. Reynolds. 2007. Rocky Mountain Bighorn Sheep (*Ovis canadensis*): A Technical Conservation Assessment. Prepared for U.S. Department of Agriculture Forest Service, Rocky Mountain Region. Prepared by TREC, Inc., Rigby, Idaho.

Beidleman, C.A. 2000. Colorado Partners in Flight Conservation Plan. Estes Park, Colorado.

Belica, L.T., N.P. Nibbelink, and D. McDonald. 2006. Mountain Sucker (*Catostomus platyrhynchus*): A Technical Conservation Assessment. U.S. Forest Service, Rocky Mountain Region. Available at: http://www.fs.fed.us/r2/projects/scp/assessments/mountainsucker.pdf, accessed Fall 2012.

Belk, M. C. 1998. Age and growth of June sucker (*Chasmistes liorus*) from otoliths. *Great Basin Naturalist* 58(4):390–392.

Benson, L. 1966. A Revision of *Sclerocactus*. *Cactus and Succulent Journal* 38: 50-57, 100-106.

Bent, A.C. 1942. *Life Histories of North American Flycatchers: Larks, Swallows, and their Allies*. Smithsonian Institution United States National Museum Bulletin. Dover Publications, New York, New York.

Bergerud, A.T. 1988. Survival and Breeding Strategies of Grouse. In *Adaptive Strategies and Population Ecology on Northern Grouse*, edited by A.T. Bergerud and M.W. Gratson, pp. 578-685. University of Minnesota Press, Minneapolis, Minnesota.

Berry, J.D. and R.L. Eng. 1985. Interseasonal Movements and Fidelity to Seasonal Use Areas by Female Sage-grouse. *Journal Wildlife Management* 49:237-240.

Biggins, D.E. 2006. The Symposium in Context. In *Recovery of the Black-footed Ferret: Progress and Continuing Challenges*, edited by J.E. Roelle, B.J. Miller, J.L. Godbey, and D.E. Biggins, pp. 3-5. U.S. Geological Survey, Fort Collins, Colorado.

Billman, E.J. 2008. Observations on shoaling and feeding behavior of June sucker in a refuge population. *Western North American Naturalist* 68:390-395.

Birds of North America. 2005. The Birds of North America Online Database, edited by A. Poole. Cornell Laboratory of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/BNA/.

Blomquist, F. 2012. Personal communication between Frank Blomquist, BLM Botanist Rawlins Field Office, and Alison Pruett, EPG Biologist, concerning occurance of Cedar Rim thistle in Carbon and Sweetwater counties. February 7, 2012.

Bond, M. L., R. J. Gutiérrez, A. B. Franklin, W. S. LaHaye, C. A. May, and M. E. Seamans. 2002. Short-term effects of wildfires on spotted owl survival, site fidelity, mate fidelity, and reproductive success. Wildlife Society Bulletin 30:1022–1028.

Bosworth, W.R., III. 2003. Vertebrate Information Compiled by the Utah Natural Heritage Program: A Progress Report. Publication No. 03-45. Utah Division of Wildlife Resources, Salt Lake City.

Boyle, S. 2006. North American River Otter (*Lontra canadensis*): A Technical Conservation Assessment. Prepared for U.S. Department of Agriculture Forest Service, Rocky Mountain Region, Species Conservation Project. Prepared by BIO-Logic Environmental, Montrose, Colorado.

Bozek, M.A., L.J. Paulson, and D.E. Deaco. 1984. Factors Affecting Reproductive Success of Bonytail Chubs and Razorback Suckers in Lake Mohave. Technical Report No. 12. Lake Mead Limnological Research Center, University of Nevada, Las Vegas.

Bradbury, J.W., R.M. Gibson, C.E. McCarthy, and S.L. Vehrencamp. 1989. Dispersion of Displaying Male Sage-grouse II: The Role of Female Dispersion. *Behavioral Ecology and Sociobiology* 24:15-24.

Bradley, P.V., M.J. O’Farrell, J.A. Williams, and J.E. Newmark. 2006. The Revised Nevada Bat Conservation Plan. Nevada Bat Working Group, Reno, Nevada.

Braun, C.E. 1979. Evolution of the Effects of Changes in Hunting Regulations on Sage-grouse Populations. Game Research Report, Project W-37-R-32. Job 9a. Colorado Division of Wildlife, Denver.

Braun, C.E. 1998. Sage-grouse declines in western North America: what are the problems? Colorado Division of Wildlife, Wildlife Research Center, Fort Collins.

Bray, M.P. and D.A. Klebenow. 1988. Feeding Ecology of White-Faced Ibises in a Great Basin Valley. *Colonial Waterbirds* 11(1):24-31.

Buehler, D.A. 2000. Bald Eagle (*Haliaeetus leucocephalus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Bureau of Land Management (BLM). 1990. Record of Decision for the Pony Express Resource Management Plan and Rangeland Program Summary for Utah County. Salt Lake Field Office, Salt Lake City, Utah.

___. 2004. National Sage-Grouse Habitat Conservation Strategy. Washington Office, Washington, D.C.

___. 2008a. Rawlins Field Office Record of Decision and Approved Resource Management Plan. Rawlins, Wyoming.

BLM. 2008b. Vernal Field Office Record of Decision and Approved Resource Management Plan. Vernal, Utah.

___. 2008c. Moab Field Office Record of Decision and Approved Resource Management Plan. Moab, Utah.

___. 2008d. Price Field Office Record of Decision and Approved Resource Management Plan. Price, Utah.

___. 2008e. Richfield Field Office Record of Decision and Approved Resource Management Plan. Richfield, Utah.

___. 2009. Colorado BLM State Director's Sensitive Species List (Animals and Plants). Colorado State Office. Available at: http://www.blm.gov/co/st/en/BLM_Programs/botany.html. accessed November 20, 2009.

___. 2010a. BLM Wyoming Sensitive Species Policy and List. Wyoming State Office, Cheyenne.

___. 2010b. Gunnison and Greater Sage-grouse Management Considerations for Energy Development. Washington Office Instruction Memorandum No. 2010-071, Washington, D.C.

___. 2011a. Interim Bureau of Land Management Sensitive Plant Species List for Utah. Utah State Office, Salt Lake City.

___. 2011b. Geographic Information System (GIS) shapefiles depicting occurrences and habitat of special status plants in the BLM White River Field Office. GIS data received November 2011 from BLM White River Field Office, Meeker, Colorado.

___. 2011c. Greater Sage-Grouse Interim Management Policies and Procedures. Washington Office Instruction Memorandum No. 2012-043, Washington, D.C.

___. 2011d. Little Snake Field Office Record of Decision and Approved Resource Management Plan. Craig, Colorado.

___. 2012a. Grand Junction Field Office Noxious Weed Inventory Map. Available at: http://www.blm.gov/co/st/en/fo/gjfo/rmp.html, accessed November 2, 2012.

___. 2012b. GIS shapefiles depicting occurrences and habitat of special status plants in the BLM Vernal Field Office. GIS data received January 2013 from BLM Vernal Field Office, Vernal, Utah.

___. 2012c. Greater Sage-Grouse Habitat Management Policy on Wyoming Bureau of Land Management Administered Public Lands Including the Federal Mineral Estate. Wyoming Instruction Memorandum No. 2012-019, Washington Office, Washington, D.C.

___. 2012d. Ferruginous Hawk. Rawlins Field Office. Rawlins, Wyoming. Available at: http://www.blm.gov/wy/st/en/field_offices/Rawlins/wildlife/hawks.html, accessed January 30, 2012.

___. 2015a. *Grand Junction Resource Area Record of Decision and Approved Resource Management Plan.* Grand Junction Field Office, Grand Junction, Colorado.

___. 2015b. *White River Field Office Record of Decision and Approved Resource Management Plan Amendment for Oil and Gas Development.* White River Field Office, Meeker, Colorado.

Burger, J. and M. Gochfeld. 1990. Nest Site Selection in Least Terns (*Sterna antillarum*) in New Jersey and New York. *Colonial Waterbirds* 13(1):31-40.

Burger, J. and M. Gochfeld. 2009. Franklin's Gull (*Leucophaeus pipixcan*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Canadian Wildlife Service and U.S. Fish and Wildlife Service. 2007. International Recovery Plan for the Whooping Crane (*Grus americana*). Third Revision. Albuquerque, New Mexico.

Cardiff, S.W. and D.L. Dittmann. 2001. Ash-throated Flycatcher (*Myiarchus cinerascens*). In *The Birds of North America*, edited by A. Poole, pp. 664. The Birds of North America, Inc., Philadelphia, Pennsylvania.

Casey, D. 2000. Partners in Flight: Bird Conservation Plan: Montana, Version 1.1. American Bird Conservancy, Kalispell, Montana.

Cerovski, A.O., T. Gorges, K.D. Byer, and D. Felley. 2001. Wyoming Bird Conservation Plan, Version 1.0. Wyoming Partners in Flight, Wyoming Game and Fish Department, Lander.

Cerovski, A.O., M. Grenier, B. Oakleaf, L. Van Fleet, and S. Patla. 2004. Atlas of Birds, Mammals, Amphibians, and Reptiles in Wyoming. Wyoming Game and Fish Department, Nongame Program, Lander.

Christ, L. 1990. A Study–Monitor Plan for Least Chub (*Iotichthys phlegethontis*) in Snake Valley, Utah. Utah Division of Wildlife Resources, Salt Lake City.

Clark, T.W. 1986. Technical Introduction. In *Great Basin Naturalist Memoirs No. 8. The Black-footed Ferret*, edited by S.L. Wood, pp. 8-10. Brigham Young University, Provo, Utah.

___. 1989. Conservation Biology of the Black-Footed Ferret (*Mustela nigripes*). Wildlife Preservation Trust, Special Scientific Report No. 3.

Clayton, C. 2012. Personal communication between Creed Clayton, U.S. Fish and Wildlife Service Biologist, and Reid Persing, EPG Biologist, concerning Mexican spotted owl habitat. June 11, 2012.

Colorado Department of Wildlife (CDOW). 2006. Colorado's Comprehensive Wildlife Conservation Strategy and Wildlife Action Plans.

Colorado Natural Heritage Program (CNHP). 1999. Conservation Status Handbook: Colorado's Animals, Plants, and Plant Communities of Special Concern. Colorado State University. Fort Collins.

___. 2002. Colorado Rare Plant Field Guide Update. Colorado State University. Fort Collins.

___. 2011. GIS shapefiles depicting locations of special status species in Colorado. GIS data received on November 18, 2011 from M. Menefee, Fort Collins, Colorado.

Colorado Department of Agriculture. 2012. Noxious Weed List. Colorado Department of Agriculture Conservation Services. Available at: http://www.colorado.gov/cs/Satellite/ag_Conservation/CBON/1251618874438, accessed October 1, 2012.

Colorado Division of Wildlife (CDOW). 2006. Colorado's Comprehensive Wildlife Conservation Strategues. Colorado Division of Wildlife, Denver.

Colorado Greater Sage-grouse Steering Committee. 2008. Colorado Greater Sage-grouse Conservation Plan. Colorado Division of Wildlife, Denver.

Colorado Parks and Wildlife (CPW). 2008. Recomended Buffer Zones and Seasonal Restrictions for Colorado Raptors.

___. 2010. Threatened and Endangered Species Lists. Available at: http://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx, accessed October 16, 2009.

___. 2012a. GIS shapefiles depicting sage-grouse preliminary priority and preliminary general habitats in Colorado. GIS data received on March 21, 2012 from Colorado Parks and Wildlife, Denver.

___. 2012b. GIS shapefiles depicting greater sage-grouse leks in Colorado. GIS data received December 2012 from Colorado Parks and Wildlife, Denver.

___.2012c. Predictive Map of Canada Lynx Habitat Use in Colorado.

Colorado Partners in Flight. 2012. Colorado Partners in Flight Physiographic Areas. Available at: http://www.rmbo.org/pif/bcp/intro/exsum.htm, accessed Fall 2012.

Connelly, J.W. 1982. An Ecological Study of Sage-grouse in Southeastern Idaho. PhD Dissertation. Washington State University, Pullman.

Connelly, J.W. and C.E. Braun. 1997. Long-term Changes in Sage-grouse (*Centrocercus urophasianus*) Populations in Western North America. *Wildlife Biology* 3:229-234.

Connelly, J.W., H.W. Browers, and R.J. Gates. 1988. Seasonal Movements of Sage-grouse in Southeastern Idaho. *Journal Wildlife Management* 52:116-122.

Connelly, J.W., S.T. Knick, C.E. Braun, W.L. Baker, E.A. Beever, T. Christiansen, K.E. Doherty, E.O. Garton, C.A. Hagen, S.E. Hanser, D.H. Johnson, M. Leu, R.F. Miller, D.E. Naugle, S.J. Oyler-McCance, D.A. Pyke, K.P. Reese, M.A. Schroeder, S.J. Stiver, B.L. Walker, and M.J. Wisdom. 2011. Conservation of Greater Sage-grouse: A Synthesis of Current Trends and Future Management. In *Greater Sage-Grouse: Ecology of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 549-563. Cooper Ornithological Union, University of California Press, Berkeley.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Unpublished Report, Western Association of Fish and Wildlife Agencies, Cheyenne, Wyoming.

Connelly, J.W., K.P. Reese, and M.A. Schroeder. 2003. Monitoring of Greater Sage-grouse Habitats and Populations. College of Natural Resources Experiment Station Publication No. 979. University of Idaho, Moscow.

Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to Manage Sage-grouse Populations and their Habitats. *Wildlife Society Bulletin* 28(4):967-985.

Conway, C.J. 1995. Virginia Rail (*Rallus limicola*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Cook, A.G. 1984. Birds of the Desert Region of Uintah County, Utah. *Western North American Naturalist* 44(4):584-620.

Cook, A.G. 2001. A review of the comparative morphology and systematics of Utah Lake suckers (*Catostomidae*). *Journal of Zoology* 254:293–308.

Corman, T.E. and C. Wise-Gervais. 2005. *Arizona Breeding Bird Atlas*. University of New Mexico Press, Albuquerque.

Crawford, J.A., R.A. Olson, N.E. West, J.C. Mosley, M.A. Schroeder, T.D. Witson, R.F. Miller, M.A. Gregg, and C.S. Boyd. 2004. Ecology and management of sage-grouse and sage-grouse habitat. *Journal Range Management* 57:2-19.

Curry, R.L., A.T. Peterson, and T.A. Langen. 2002. Western Scrub-Jay (*Aphelocoma californica*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Cuthbert, F.J. and L.R. Wires. 1999. Caspian Tern (*Hydroprogne caspia*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Cypher, B.L. 2003. Foxes *Vulpes* species, *Urocyon* species, and *Alopex* species. In *Wild Mammals of North America*, edited by G.A. Feldhamer, B.C. Thompson, and J.A. Chapman, pp. 511-546. Johns Hopkins University Press, Baltimore, Maryland and London, England.

Dalke, P.D., D.B. Pyrah, D.C. Stanton, J.E. Crawford, and E.F. Schlatterer. 1960. Seasonal Movements and Breeding Behavior of Sage-grouse in Idaho. *Transactions of North American Wildlife and Natural Resource Conference* 25:396-407.

Dalke, P.D., D.B. Pyrah, D.C. Stanton, J.E. Crawford, and E.F. Schlatterer. 1963. Ecology, Productivity, and Management of Sage-Grouse in Idaho. *Journal of Wildlife Management* 27:811-841.

Daw, S.K. and S. DeStefano. 2001. Forest Characteristics of Northern Goshawk Nest Stands and Post-fledging Areas in Oregon. *Journal of Wildlife Management* 65(1):59-65.

Degenhardt, W.G., C.W. Painter, and A.H. Price. 1996. *Amphibians and Reptiles of New Mexico*. University of New Mexico Press, Albuquerque.

Doherty, K.E. 2008. Sage-grouse and Energy Development: Integrating Science with Conservation Planning to Reduce Impacts. PhD Dissertation. University of Montana, Missoula.

Drut, M.S., J.A. Crawford, and M.A. Gregg. 1994. Brood Habitat Use by Sage-grouse in Oregon. *Great Basin Naturalist* 54:170-176.

Dryer, M.P. and A.J. Sandvol. 1993. Recovery Plan for the Pallid Sturgeon (*Scaphirhynchus albus*). U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

Dunn, P.O. and C.E. Braun. 1986. Summer Habitat Use by Female and Juvenile Sage-grouse. *Journal of Wildlife Management* 50:228-235.

Dzialak, M.R., C.V. Olson, S.M. Harju, S.L. Webb, and J.B. Winstead. 2012. Temporal and hierarchical spatial components of animal occurrence: conserving seasonal habitat for greater sage-grouse. Ecosphere 3(4):30.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. Simon & Schuster, New York, New York.

___. 1992. *Birds in Jeopardy*. Stanford University Press, Stanford, California.

Elliott-Smith, E., and S.M. Haig. 2005. Piping Plover (*Charadrius melodus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Ellis, K.L., J.R. Murphy, and G.H. Richins. 1987. Distribution of Breeding Male Sage-Grouse in Northeastern Utah. *Western Birds* 18:117-121.

Eng, R.L. and P. Schladweiler. 1972. Sage-grouse Winter Movements and Habitat Use in Central Montana. *Journal Wildlife Management* 36:141-146.

Epanchin-Niell, R., J. Englin, and D. Nalle. 2009. Investing in Rangeland Restoration in the Arid West, USA: Countering the Effects of an Invasive Weed on the Long-term Fire Cycle. *Journal of Environmental Management* 91:370-379.

Esch, K.L., G.P. Beauvais, and D.A. Keinath. 2005. Species Conservation Assessment for Black-footed Ferret (*Mustela nigripes*) in Wyoming. Wyoming Natural Diversity Database, University of Wyoming, Laramie.

Estes-Zumpf, W.A. and J.L. Rachlow. 2009. Natal Dispersal by Pygmy Rabbits (*Brachylagus idahoensis*). *Journal of Mammalogy* 902:363-372.

Evans, J.W. 1939. Sclerocactus franklinii. *Cactus and Succulents Journal* 11:74.

Fahrig, L. 2003. Effects of Habitat Fragmentation on Biodiversity. *Annual Review of Ecology, Evolution, and Systematics* 34:487-515.

Fertig, W., C. Refsdal, and J. Whipple. 1994. Wyoming Rare Plant Field Guide. Northern Prairie Wildlife Research Center Online, Jamestown, North Dakota, Wyoming Rare Plant Technical Committee. Cheyenne, Wyoming..

Fertig, W. and R. Thurston. 2003. Modeling the Potential Distribution of BLM Sensitive and U.S. Fish and Wildlife Service Threatened and Endangered Plant Species in Wyoming. Wyoming Natural Diversity Database, University of Wyoming, Laramie.

Fischer, R.A., A.D. Apa, W.L. Wakkinen, and K.P. Reese. 1993. Nesting-area Fidelity of Sage-grouse in Southeastern Idaho. *Condor* 95:1038-1041.

Fischer, R.A., K.P. Reese, and J.W. Connelly. 1996. An Investigation of Fire Effects Within Xeric Sage-grouse Brood Habitat. *Journal Range Management* 49:194-198.

FishBase. 2014. June sucker. FishBase online database. Available at http://www.fishbase.org/search.php, accessed October 13, 2014.

Flora of North America Editorial Committee. 1993+. *Flora of North America North of Mexico*. 16+ vols. New York, New York and Oxford, England.

Florida Museum of Natural History. 2012. Stonecat (*Noturus flavus*). Available at: http://www.flmnh.ufl.edu/catfish/ictaluridae/stonecat.htm.

Floyd, T., C.S. Elphick, C. Graham, K. Mack, R.G. Elston, E.M. Ammon, and J.D. Boone. 2007. *Atlas of the Breeding Birds of Nevada*. University of Nevada Press, Reno.

Forrest, S.C., D.E. Biggens, L. Richardson, T.W. Clark, T.M. Campbell, III, K.A. Fagerstone, and E.T. Thorne. 1988. Population Attributes for the Black-footed Ferret (*Mustela nigripes*) at Meeteetse, Wyoming, 1981-1985. *Journal of Mammology* 69(2):261-273.

Franklin, M.A. 1992. Report for 1991 Challenge Cost Share Project. Bureau of Land Management. Target species: *Schoenocrambe argillacea* (Welsh & Atwood) Rollins. p.10.

___. 2005. Plant Information Compiled by the Utah Natural Heritage Program: A Progress Report. Utah Department of Natural Resources, Salt Lake City.

Fuller, P. and M. Neilson. 2012. *Etheostoma exile* (Iowa darter). USGS Nonindigenous Aquatic Species Database. Gainesville, Florida. Available at: http://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=812, accessed January 9, 2012.

Ganey, J.L. 1998. Spotted Owl. In *The Raptors of Arizona*, edited by R.L. Glinski, pp. 220. University of Arizona Press, Tucson.

Gardali, T. and G. Ballard. 2000. Warbling Vireo (*Vireo gilvus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Garton, E.O., J.W. Connelly, J.S. Horne, C.A. Hagen, A. Moser, and M. Schroeder. 2011. Greater Sage-grouse Population Dynamics and Probability of Persistence. In *Greater Sage-grouse Population Dynamics and Probability of Persistence*, edited by S.T. Knick and J.W. Connelly, pp. 293-381. Cooper Ornithological Union, University of California Press, Berkeley.

Gibson, R.M. 1996. A Re-evaluation of Hotspot Settlement in Lekking Sage-Grouse. *Animal Behaviour* 52:993-1005.

Giesen, K.M. and J.W. Connelly. 1993. Guidelines for Management of Columbian Sharp-tailed Grouse Habitats. *Wildlife Society Bulletin* 21:325-333.

Gill, R.B. 1965. Distribution and Abundance of a Population of Sage-grouse in North Park, Colorado. Ms. Thesis. Colorado State University, Fort Collins.

Gill, R.B. and F.A. Glover. 1965. Daily and Seasonal Movements of Sage-Grouse. Colorado Cooperative Wildlife Research Unit Technical Paper 3, Fort Collins.

Glennon, J. 2012. Personal communication between Jim Glennon, BLM Botanist Rock Springs Field Office, and Alison Pruett, EPG Biologist, concerning suitable habitat for Rock Springs Field Office rare plants. February 14, 2012.

Glinski, R.L. 1998. *The Raptors of Arizona*, edited by R.L. Glinski. The University of Arizona Press, Tucson.

Gordon, C.E. 2000. Movement Patterns of Wintering Grassland Sparrows in Arizona. *The Auk* 117(3):748-759.

Gorell, J.V., M.E. Andersen, K.D. Bunnell, M.F. Canning, A.G. Clark, D.E. Dolsen, and F.P. Howe. 2005. Utah Comprehensive Wildlife Conservation Strategy. Utah Division of Wildlife Resources, Salt Lake City.

Gorman, O.T. and D.M. Stone. 1999. Ecology of Spawning Humpback Chub, *Gila cypha*, in the Little Colorado River Near Grand Canyon, Arizona. *Environmental Biology of Fishes* 55(1-2):115-133.

Gough, G.A., J.R. Sauer, and I.M. Patuxent. 1998. Breeding Bird Survey Report and Christmas Bird Count Report. Bird Identification Infocenter. Version 97.1. Patuxent Wildlife Research Center. Laurel, Maryland. Available at: http://www.mbr-pwrc.usgs.gov/id/framlst/infocenter.html

Greer, R. 1990. Sage-grouse Habitat Requirements and Development. Habitat Extension Bulletin Number 31. Habitat Extension Services, Wyoming Game and Fish Department, Laramie.

Gutierrez, R.J., A.B. Franklin, and W.S. Lahaye. 1995. Spotted Owl (*Strix occidentalis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Hagen, C.A., J.W. Connelly, and M.A. Schroeder. 2007. A Meta-Analysis of Greater Sage-grouse *Centrocercus urophasianus* Nesting and Brood-Rearing Habitats. *Wildlife Biology* 13(Supplement 1):42-50.

Hamman, R.L. 1982. Spawning and Culture of Humpback Chub. *Progressive Fish-Culture* 44:213-216.

Hansen, H.A., P.K. Shepherd, J.G. King, and W.A. Troyer. 1971. The Trumpeter Swan in Alaska. *Wildlife Monograph* 26:3-83.

Harrison, H.H. 1979. *A Field Guide to Western Birds' Nests*. Houghton Mifflin Company, Boston, Massachusetts.

Hausleitner, D. 2003. Population Dynamics, Habitat Use and Movements of Greater Sage-grouse. Masters Thesis. University of Idaho, Moscow.

Heidel, B. and W. Fertig. 2003. State species abstract for *Astragalus racemosus* var. *treleasei* (Trelease’s racemose milkvetch), *Fabaceae*. Wyoming Natural Diversity Database, Laramie.

Heil, K.D., B. Armstrong, and D. Schleser. 1981. A Review of the Genus *Pediocactus*. *Cactus and Succulent Journal* 53:17-39.

Hickman, J.C. 1993. *The Jepson Manual Higher Plants of California*. University of California Press, Berkeley and Los Angeles.

Hillman, C.N. and T.W. Clark. 1980. *Mustela nigripes*. *Mammalian Species* 126:1-3.

Hirsch, C.L., S.E. Albeke, and T.P. Nesler. 2006. Range-Wide Status of Colorado River Cutthroat Trout (*Oncorhynchus clarkii pleuriticus*). Colorado River Cutthroat Trout Conservation Team Report. Colorado Division of Wildlife, Fort Collins.

Hoffman, R.W. and A.E. Thomas. 2007. Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*): A Technical Conservation Assessment. U.S. Department of Agriculture Forest Service, Rocky Mountain Region, Denver, Colorado.

Hogrefe, T., C. Bailey, P. Thompson, and B. Nadolski. 2005. Boreal Toad (*Bufo boreas boreas*) Conservation Plan. Publication Number 5-37. Utah Division of Wildlife Resources, Salt Lake City.

Holloran, M.J. 1999. Sage-grouse (*Centrocercus urophasianus*) Seasonal Habitat Use near Casper, Wyoming. Masters Thesis. University of Idaho, Moscow.

___. 2005. Greater Sage-grouse (*Centrocercus urophasianus*) Population Response to Natural Gas Field Development in Western Wyoming. PhD Thesis. Department of Zoology and Physiology, University of Wyoming, Laramie.

Holloran, M.J., B.J. Heath, A.G. Lyon, S.J. Slater, J.L. Kuipers, and S.H. Anderson. 2005. Greater Sage-grouse Nesting Habitat Selection and Success in Wyoming. *Journal Wildlife Management* 69:639-649.

Homer, C., C. Huang, L. Yang, B. Wylle, and M. Coan. 2004. Development of a 2001 National Land-Cover Database for the United States. *Photogrammetric Engineering & Remote Sensing* 70(7):829-840.

Hothem, R.L., B.E. Brussee, and W.E. Davis. 2010. Black-crowned Night-heron (*Nycticorax nycticorax*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Hughes, J.M. 1999. Yellow-billed Cuckoo (*Coccyzus americanus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Hupp, J.W. and C.E. Braun. 1991. Geographic Variation Among Sage-grouse in Colorado. *Wilson Bulletin* 103:255-261.

Institute for Wildlife Protection. 2002. Petition to list the eastern subspecies of the greater sage-grouse as endangered. Institute for Wildlife Protection. 524 pages.

Intergovernmental Panel on Climate Change. 2007. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland.

Jenness, J.S. 2000. The effects of fire on Mexican spotted owls in Arizona and New Mexico. Master's Thesis, Northern Arizona University, Flagstaff. Arizona. 131 pages.

Johnsgard, P.A. 1988. *North American Owls: Biology and Natural History*. Smithsonian Institution Press, Washington, D.C.

Johnson, D.J., M.J. Holloran, J.W. Connelly, S.E. Hanser, C.L. Amundson, and S.T. Knick. 2011. Influences of Environmental and Anthropogenic Features on Greater Sage-Grouse Populations, 1997-2007. In *Greater Sage-Grouse: Ecology and Conservation of a Landscape Species and its Habitats. Studies in Avian Biology*, edited by S.T. Knick and J.W. Connelly, pp. 407-450. University of California Press, Berkeley.

Johnson, G.D. and M.S. Boyce. 1990. Feeding Trials with Insects in the Diet of Sage-grouse Chicks. *Journal Wildlife Management* 54:89-91.

Johnson, J.B., T.E. Dowling, and M.C. Belk. 2004. Neglected Taxonomy of Rare Desert Fishes: Congruent Evidence for Two Species of Leatherside Chub. *Systematic Biology* 53(6):841-855.

Johnson, R.E. 2002. Black Rosy-Finch (*Leucosticte atrata*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Johnson, R.E., P. Hendricks, D.L. Pattie, and K.B. Hunter. 2000. Brown-capped Rosy-Finch (*Leucosticte australis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Jones, F.L. and J.F. Cahlan. 1975. Water: a History of Las Vegas. Volume 1. Las Vegas Valley Water District, Las Vegas, NV.

Jorgensen, J. 2013. Personal communication between Jenna Jorgensen, U.S. Forest Service Biologist, and Reid Persing, EPG Biologist. Utah Section 7 meeting summary January 27, 2013; additional communication October 2013.

Kaeding, L.R., B.D. Burdick, P.A. Schrader, and W.R. Noonan. 1986. Recent Capture of a Bonytail (*Gila elegans*) and Observations of this Nearly Extinct Cyprinid from the Colorado River. *Copeia* 4(4):1021-1023.

Kahn, N.W., C.E. Braun, J.R. Young, S. Wood, D.R. Mata, and T.W. Quinn. 1999. Molecular Analysis of Genetic Variation Among Large- and Small-bodied Sage-grouse Using Mitochondrial Control-region Sequences. *Auk* 116(3):819-824.

Karam A. P. and P. C. Marsh. 2010. Predation of adult razorback sucker and bonytail by striped bass in21 Lake Mohave, Arizona-Nevada. *Western North American Naturalist* 70:117-120.

Keinath, D. and M. McGee. 2005. Boreal Toad (*Bufo boreas boreas*): A Technical Conservation Assessment. Prepared for U.S. Department of Agriculture Forest Service, Rocky Mountain Region. Prepared by Wyoming Natural Diversity Database, Laramie Wyoming and EPO Biology, Boulder, Colorado.

Keinath, D.A. 2004. Species Assessment for White-tailed Prairie Dog (*Cynomys leucurus*) in Wyoming. Bureau of Land Management, Wyoming State Office, Cheyenne.

Keinath, D.A. and G.P. Beauvais. 2006. Wyoming Pocket Gopher (*Thomomys clusius*): A Technical Conservation Assessment. Pepared for U.S. Department of Agriculture Forest Service, Rocky Mountain Region. Prepared by Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming.

Kingery, H.E. and C.K. Ghalambor. 2001. Pygmy Nuthatch (*Sitta pygmaea*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Klebenow, D.A. 1969. Sage-grouse Nesting and Brood Habitat in Idaho. *Journal Wildlife Management* 33:649-662.

Klebenow, D.A. and G.M. Gray. 1968. Food Habits of Juvenile Sage-grouse. *Journal Range Management* 21:80-83.

Knapp, P.A. 1996. Cheatgrass (*Bromus tectorum* L.) Dominance in the Great Basin Desert: History, Persistence, and Influences to Human Activities. *Global Environmental Change* 6:37-52.

Knick, S.T. and J.W. Connelly. 2011. Greater Sage-grouse and Sagebrush: An Introduction to the Landscape. In *Greater Sage-Grouse: ecology and conservation of a landscape species and its habitats*, edited by S.T. Knick and J.W. Connelly, pp. 1-9. Cooper Ornithological Union, University of California Press, Berkeley.

Knick, S.T., S.E. Hanser, R.F. Miller, D.A. Pyke, M.J. Wisdom, S.P. Finn, E.T. Rinkes, and C.J. Henny. 2011. Ecological Influence and Pathways of Land Use in Sagebrush. In *Greater Sage-Grouse: Ecology of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 203-252. Cooper Ornithological Union, University of California Press, Berkeley.

Knopf, F.L. 1979. Spatial and Temporal Aspects of Colonial Nesting of White Pelicans. *The Cooper Ornithological Society* 81:353-363.

Knopf, F.L. and B.J. Miller. 1994. *Charadrius montanus*: Montane, Grassland, or Bare-Ground Plover? *Auk* 111(2):504-506.

Knopf, F.L. and J.R. Rupert. 1995. Habits and Habitats of Mountain Plovers in California. *The Condor* 97:743-751.

Knorr, O.A. 1961. The Geographical and Ecological Distribution of the Black Swift in Colorado. *The Wilson Bulletin* 73(2):155-170.

Knowles, C.J. and C.J. Stoner. 1982. Selective Use of Black-tailed Prairie Dog Towns by Mountain Plovers. *The Condor* 84:71-74.

Laymon, S.A. 1998. Yellow-billed Cuckoo (*Coccyzus americanus*). In *The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-Associated Birds in California*. California Partners in Flight.

Leach, H.R. and A.L. Hensley. 1954. The Sage-Grouse in California with Special Reference to Food Habitats. *California Fish and Game* 40:385-394.

Leonard, D.L. 2001. American Three-toed Woodpecker (*Picoides dorsalis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Lewis, J.C. 1995. Whooping Crane (*Grus americana*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Linder, R.L., M.E. Andersen, E.M. Brigham, C.N. Hillman, D.L. Lengkeek, A.L. Lovaas, J.K. McDowell, and W.W. Paintner. 1978. Black-footed Ferret Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prarie Region (6), Denver, Colorado.

Livingston, S.A., C.S. Todo, W.B. Krohn, and R.B. Owen. 1990. Habitat Models for Nesting Bald Eagles in Maine. *The Journal of Wildlife Management* 54(4):644-653.

Lower Colorado River Multi-Species Conservation Program. 2004. Lower Colorado River Multi-Species Conservation Program, Volume II: Habitat Conservation Plan. Final. December 17. (J&S 00450.00) Sacramento, California.

Lowry, J.H., Jr., R.D. Ramsey, K. Boykin, D. Bradford, P. Comer, S. Falzarano, W. Kepner, J. Kirby, L. Langs, J. Prior-Magee, G. Manis, L. O'Brien, T. Sajwaj, K.A. Thomas, W. Rieth, S. Schrader, D. Schrupp, K. Schulz, B. Thompson, C. Velaszquez, C. Wallace, E. Waller, and B. Wolk. 2005. Southwest Regional Gap Analysis Project: Final Report on Land Cover Mapping Methods. RS/GIS Laboratory, Utah State University, Logan.

Lowther, P., A.F. Poole, J.P. Gibbs, S. Melvin, and F.A. Reid. 2009. American Bittern (*Botaurus lentiginosus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Luce, R. and D. Keinath. 2003. Species Assessment for Baird's Sparrow (*Ammodramus bairdii*) in Wyoming. Bureau of Land Management, Wyoming State Office, Cheyenne.

___. 2007. Spotted Bat (*Euderma maculatum*): A Technical Conservation Assessment. U.S. Department of Agriculture Forest Service, Rocky Mountain Region, Species Conservation Project, Denver, Colorado.

Marín, M. 1997. Some Aspects of the Breeding Biology of the Black Swift. *The Wilson Bulletin* 109(2):290-306.

Marsh, P.C., M.E. Douglas, W.L. Minckley, and R.J. Timmons. 1991. Rediscovery of Colorado Squawfish, *Ptychocheilus lucius* (Cyprinidae), in Wyoming. *Copeia* 1991(4):1091-1092.

Martin, J.W. and B.A. Carlson. 1998. Sage Sparrow (*Amphispiza belli*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Mccallum, D.A. 1994. Flammulated Owl (*Otus flammeolus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

McNicholl, M.K., P.E. Lowther, and J.A. Hall. 2001. Forster's Tern (*Sterna forsteri*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Meaney, C. and G.P. Beauvais. 2004. Species Assessment for Canada Lynx (*Lynx canadensis*) in Wyoming. Bureau of Land Management, Wyoming State Office, Cheyenne.

Miller, R.F., S.T. Knick, D.A. Pyke, C.W. Meinke, S.E. Hanser, M.J. Wisdom, and A.L. Hild. 2011. Characteristics of Sagebrush Habitats and Limitations to Long-term Conservation. In *Greater Sage-Grouse: Ecology of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 145-184. Cooper Ornithological Union, University of California Press, Berkeley.

Miller, R.R. 1961. Man and Changing Fish Fauna of the American Southwest. *Papers of the Michigan Academy of Science, Arts, and Letters* 46:365-404.

Miller, W.J., D.E. Rees, R.J. Carr, and D.S. Berube. 2005. Hornyhead Chub (*Nocomis biguttatus*): A Technical Conservation Assessment. Prepared for U.S. Department of Agriculture U.S. Forest Service, Rocky Mountain Region, Denver, Colorado. Prepared by Miller Ecological Consultants, Inc., Fort Collins, Colorado.

Minckley, W.L., P.C. Marsh, J.E. Brooks, J.E. Johnson, and B.L. Jensen. 1991. Management Towards Recovery of the Razorback Sucker. In *Battle Against Extinction: Native Fish Management in the American West*, edited by W.L. Minckley and J.E. Deacon, pp. 303-317. University of Arizona Press, Tucson.

Minckley, W.L., P.C. Marsh, J.E. Deacon, T.E. Dowling, P.W. Hedrick, W.J. Matthews, and G. Mueller. 2003. A Conservation Plan for Native Fishes of the Lower Colorado River. *BioScience* 53(3):219-234.

Minckley, W.L. and P.C. Marsh. 2009. Inland Fishes of the Greater Southwest: Chronicle of a Vanishing Biota. University of Arizona Press, Tucson, Arizona.

Mitchell, C.D. 2010. Trumpeter Swan (*Cygnus buccinator*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Modde T. and N. Muirhead. 1994. Spawning chronology and larval emergence of June sucker (*Chasmistes liorus*). *Great Basin Naturalist* 54:366-370.

Murphy, E.C. and W.A. Lehnausen. 1998. Density and Foraging Ecology of Woodpeckers Following a Stand-Replacement Fire. *Journal of Wildlife Management* 62(4):1359-1372.

Murray, D. L., T. D. Steury, and J. D. Roth. 2008. Assessment of Canada lynx research and conservation needs in the southern range: another kick at the cat. *Journal of Wildlife Management* 72:1463-1472.

National Geographic Society. 1999. *Field Guide to the Birds of North America*. 3rd edition, Washington, D.C.

National Geographic Society. 2002. *Field Guide to Birds of North America*. 4th edition, Washington, D.C.

Natural Resource Conservation Service (NRCS). 2013a. Juab County Noxious Weeds. Available at: http://plants.usda.gov, accessed April 22, 2013.

___. 2013b. Utah County Noxious Weeds. Available at: http://plants.usda.gov, accessed April 22, 2013.

___. 2013c. Narrow-Stem Gilia (*Gilia stenothrysa*). Available at: www.plants.usda.gov, accessed April 717, 2013.

NatureServe. 2008a. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed January 19, 2009.

___. 2008b. NatureServe Explore: An online encyclopedia of life [web application]. Version 7.0. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed December 1, 2008.

NatureServe. 2008c. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed November 20, 2008.

___.2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed January 12, 2009.

___. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed November 2, 2011.

___. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed November 30, 2012.

___. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. Arlington, Virginia. Available at: http://www.natureserve.org/explorer, accessed August 9, 2013.

Naugle, D.E., K.E. Doherty, B.L. Walker, H.E. Copeland, M.J. Holloran, and J.D. Tack. 2011. Sage-grouse and Cumulative Impacts of Energy Development. In *Energy Development and Wildlife Conservation in Western North America*, edited by D.E. Naugle, pp. 55-70. Island Press, Washington, D.C.

Neel, L.A. 1980. Sage-grouse Response to Grazing Management in Nevada. Masters Thesis. University of Nevada, Reno.

Nevada Department of Wildlife. 2007. Programmatic Safe Harbor Agreement for Voluntary Enhancement/Restoration Activities Benefitting Razorback Sucker and Bonytail Chub within Clark County, Nevada. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

Oliver, G.V. 2000. The Bats of Utah - A Literature Review. Utah Natural Heritage Program, Utah Division of Wildlife Resources, Publication Number 00-14, Salt Lake City.

Oliver, G.V. and W.R.I. Bosworth. 1999. Rare, Imperiled, and Recently Extinct or Extirpated Mollusks of Utah - A Literature Review. Utah Division of Wildlife Resources, Publication Number 99-29, Salt Lake City.

Oyler-McCance, S.J., N.W. Kahn, K.P. Burnham, C.E. Braun, and T.W. Quinn. 1999. A Population Genetic Comparison of Large- and Small-bodied Sage-grouse in Colorado Using Microsatellite and Mitochondrial DNA Markers. *Molecular Ecology* 8:1457-1465.

Oyler-McCance, S.J., S.E. Taylor, and T.W. Quinn. 2005. A Multilocus Population Genetic Survey of the Greater Sage-grouse Across Their Range. *Molecular Ecology* 14:1293-1310.

Page, G.W., L.E. Stenzel, and C.A. Ribic. 1985. Nest Site Selection and Clutch Predation in the Snowy Plover. *The Auk* 102:347-353.

Page, G.W., M.A. Stern, and P.W.C. Paton. 1995. Differences in Wintering Areas of Snowy Plovers from Inland Breeding Sites in Western North America. *The Condor* 79:258-262.

Pampush, G.J. and R.G. Anthony. 1993. Nest Success, Habitat Utilization and Nest-Site Selection of Long-Billed Curlews in the Columbia Basin, Oregon. *Condor* 95:957-967.

Paquet, P.C. and L.N. Carbyn. 2003. Gray Wolf *Canis lupus* and Allies. In *Wild Mammals of North America*, 2nd edition, edited by G.A. Feldhamer, B.C. Thompson, and J.A. Chapman, pp. 482-510. The Johns Hopkins University Press, Baltimore, Maryland and London, England.

Parrish, J.R., F. Howe, and R. Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy. Version 2.0. Utah Division of Wildlife Resources, Publication Number 02-27, Salt Lake City.

Parsons, K.C. and T.L. Master. 2000. Snowy Egret (*Egretta thula*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Patterson, R.L. 1952. *The Sage grouse in Wyoming*. Wyoming Game and Fish Commission and Sage Books, Denver, Colorado.

Penstemon Conservation Team. 2014. Conservation Agreement and Strategy for Graham’s Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus var. albifluvis*). Prepared for the State of Utah School and Institutional Trust Lands Administration; Uintah County, Utah; Utah Public Lands Coordination Office; Utah Division of Wildlife Resources; Rio Blanco County, Colorado; Bureau of Land Management; and U.S. Fish and Wildlife Service. Prepared by SWCA Environmental Consultants, Salt Lake City, Utah. July 22, 2014.

Penstemon Conservation Team. 2015. Conservation Agreement and Strategy for Graham’s Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus var. albifluvis*): Mitigation Plan. Prepared for the State of Utah School and Institutional Trust Lands Administration; Uintah County, Utah; Utah Public Lands Coordination Office; Utah Division of Wildlife Resources; Rio Blanco County, Colorado; Bureau of Land Management; and U.S. Fish and Wildlife Service. Prepared by SWCA Environmental Consultants, Salt Lake City, Utah. July 21, 2015.

Peterson, J.G. 1970. The Food Habits and Summer Distribution of Juvenile Sage-grouse in Central Montana. *Journal Wildlife Management* 34:147-155.

Phillips, A.R. 1948. Geographic Variation in *Empidonx traillii*. *Auk* 65:507-514.

Phillips, A.R., J. Marshall, and G. Monson. 1964. *The Birds of Arizona*. University of Arizona Press, Tucson.

Porter, D.K., M.A. Strong, J.B. Giezentanner, and R.A. Ryder. 1975. Nest Ecology, Productivity, and Growth of the Loggerhead Shrike on the Shortgrass Prairie. *The Southwestern Naturalist* 19(4):429-436.

Powell, R.A., S.A. Buskirk, and W.J. Zielinski. 2003. Fisher and Marten *Martes pennanti and Martes americana*. In *Wild Mammals of North America*, 2nd edition, edited by G.A. Feldhamer, B.C. Thompson, and J.A. Chapman, pp. 636-649. The Johns Hopkins Univeristy Press, Baltimore, Maryland and London, England.

Probert, R.B. 2013. Personal communication by R. Probert, BLM Fillmore Field Office, concerning the presence of blue flowering lettuce and squarrose knapweed occurring at the BLM Fillmore Field Office. February 2013.

Pyke, D.A. 2011. Restoring and Rehabilitating Sagebrush Habitats. In *Greater Sage-Grouse: Ecology of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 531-563. Cooper Ornithological Union, University of California Press, Berkeley.

Rahel, F.J. and L.A. Thel. 2004. Plains Topminnow (*Fundulus sciadicus*): A Technical Conservation Assessment. Prepared for U.S. Department of Agriculture Forest Service, Rocky Mountain Region. Prepared by University of Wyoming Department of Zoology and Physiology, Laramie, Wyoming.

Rassmussen, D.I. and L.A. Griner. 1938. Life History and Management Studies of the Sage-grouse in Utah, with Special Reference to Nesting and Feeding Habits. *Transactions of the North American Wildlife and Natural Resources Conference* 3:852-864.

Reaser, J.K. and D.S. Pilliod. 2005. Columbia Spotted Frog (*Rana luteiventris*) In *Amphibian Declines: The Conservation Status of United States Species*, edited by M. Lannoo, pp. 559-563. University of California Press, Berkeley.

Redder, A.J., B.E. Smith, and D.A. Keinath. 2006. Smooth Green Snake (*Opheodrys vernalis*): A Technical Conservation Assessment. U.S. Department of Agriculture Forest Service, Rocky Mountain Region, Denver, Colorado.

Remington, T.E. and C.E. Braun. 1985. Sage-grouse Food Selection in Winter, North Park, Colorado. *Journal Wildlife Management* 49:1055-1061.

Reynolds, T.D., T.D. Rich, and D.A. Stephens. 1999. Sage Thrasher (*Oreoscoptes montanus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Ridgely, R.S., T.F. Allnutt, T. Brooks, D.K. McNicol, D.W. Mehlman, B.E.Young, and J.R. Zook. 2007. Digital Distribution Maps of the Birds of the Western Hemisphere, Version 3.0. NatureServe. Arlington, Virginia. Available at: http://www.birdlife.org/datazone/info/spcdownload, accessed March 2007.

Robertson, M.D. 1991. Winter Ecology of Migratory Sage-grouse and Associated Effects of Prescribed Fire in Southern Idaho. Masters Thesis. University of Idaho, Moscow.

Rodriguez, R. 2012. Life History and Analysis of Endangered, Threatened, Candidate, Sensitive, and Management Indicator Species of the Dixie National Forest. Version 5.0. 102 pp. Cedar City, Utah.

Romin, L.A. and J.A. Muck. 2002. Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances. U.S. Fish and Wildlife Service, Utah Ecological Services, West Valley City.

Rotenberry, J.T., M.A. Pattern, and K.L. Preston. 1999. Brewer's Sparrow (*Spizella breweri*). The Birds of North American Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Roth, J.D., J.D. Marshall, D.L. Murray, D.M. Nickerson, and T.S. Steury. 2007. Geographical gradients in diet affect population dynamics of Canada lynx. *Ecology* 88:2736-2743.

Rowland, M.M., L.H. Suring, and M.J. Wisdom. 2010. Assessment of Habitat Threats to Shrublands in the Great Basin: A Case Study. In *Environmental Threat Assessment and Application to Forest and Rangeland Management*, edited by J.M. Pye, H.M. Rauscher, Y. Sands, D.C. Lee, and J.C. Beatty, pp. 673-685. U.S. Forest Service, General Technical Report PNW-GTR-802, Bozeman, Montana.

Ryder, R.A. and D.E. Manry. 1994. White-faced Ibis (*Plegadis chihi*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Sansom, T. and B. Elliott. 2012. Jones' Cycladenia Study (*Cycladenia humilis* var. *jonesii*) Including Habitat Model and Survey Report. Prepared for Bureau of Land Management, Price Field Office, Price, Utah. Prepared by JG Management Systems, Inc., Grand Junction, Colorado.

Savage, D.E. 1969. The Relationship of Sage-grouse to Upland Meadows in Nevada. *Transactions of the Annual Meeting, California-Nevada Section of The Wildlife Society* 16:8-17.

Schmidly, D.J. 1991. *The Bats of Texas*. Texas A&M University Press, College Station, Texas.

Schroeder, M.A. 1997. Unusually High Reproductive Effort by Sage Grouse in a Fragmented Habitat in North-Central Washington. *Condor* 99:933-941.

Schroeder, M.A., C.L. Aldridge, A.D. Apa, J.R. Bohne, C.E. Braun, S.D. Bunnell, J.W. Connelly, P.A. Deibert, S.C. Gardner, M.A. Hilliard, G.D. Kobriger, S.M. McAdam, C.W. McCarthy, J.J. McCarthy, D.L. Mitchell, E.V. Rickerson, and J. Stiver. 2004. Distribution of Sage-grouse in North America. *Condor* 106:363-376.

Schroeder, M.A., J.R. Young, and C.E. Braun. 1999. Greater Sage-Grouse (*Centrocercus urophasianus)*. The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Schwartz, M.K., L.S. Mills, K.S. McKelvey, L.F. Ruggiero, and F.W. Allendorf. 2004. DNA reveals high dispersal synchronizing the population dynamics of Canada lynx. *Nature* 415:520-522.

Sedgwick, J.A. 2000. Willow Flycatcher (*Empidonax traillii*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Senseman, R. 2002. *Cervus elaphus*. Animal Diversity Web. Available at: http://animaldiversity.ummz.umich.edu/site/accounts/information/Cervus_elaphus.html, accessed November 9, 2011.

Shackelton, D.M. 1985. Ovis canadensis. *Mammalian Species* 230:1-9.

Shane, T.G. 2000. Lark Bunting (*Calamospiza melanocorys*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Sipes, S.D. and V.J. Tepedino. 1995. Reproductive Biology of the Rare Orchid, Spiranthes Diluvialis: Breeding System, Pollination and Implications for Conservation. *Conservation Biology* 9(4):929-938.

Sloane, S.A. 2001. Bushtit (*Psaltriparus minimus*). The Birds of North America Online, edited by A. Poole Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Smith, B. 2008. Wildlife Report on Manti-La Sal National Forest Management Indicator Species and Migratory Birds for the North Paradox Range Allotment. U.S. Department of Agriculture Forest Service, Price, Utah.

Smith, B.E. and N.T. Stephens. 2003. Conservation Assessment of the Pale Milk Snake in the Black Hills National Forest, South Dakota and Wyoming. U.S. Department of Agriculture Forest Service, Rocky Mountain Region, Denver, Colorado, Black Hills National Forest, Custer, South Dakota.

Smith, J.W. and R.B. Renken. 1991. Least Tern Nesting Habitat in the Mississippi River Valley Adjacent to Missouri. *Journal of Field Ornithology* 62:497-504.

Smith, R.L. 1963. Some Ecological Notes on the Grasshopper Sparrow. *The Wilson Bulletin* 75(2):159-165.

Smithsonian. 2011. North American Mammals Online Database. Smithsonian Institution. Washington, D.C. Available at: http://www.mnh.si.edu/mna/main.cfm, accessed Fall 2011.

Sogge, M.K., R.M. Marshall, S.J. Sferra, and T.J. Tibbitts. 1997. A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol. Technical Report NPS/NAUCPRS/NRTR-97/12. U.S. Department of the Interior, National Park Service, Colorado Plateau Research Station, Flagstaff, Arizona.

Sovada, M.A., R.O. Woodward, and L.D. Igl. 2011. Historical Range, Current Distribution, and Conservation Status of the Swift Fox, *Vulpes velox*, in North America. U.S. Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, North Dakota.

Spackman, S. and D.G. Anderson. 2002. Colorado Rare Plant Field Guide: 2002 Update. Colorado Natural Heritage Program. Fort Collins.

Speiser, R. and T. Bosakowski. 1987. Nest Site Selection by Northern Goshawks in Northern New Jersey and Southeastern New York. *The Condor* 89:387-394.

Squires, J.R. and T. Laurion. 1999. Lynx home range and movements in Montana and Wyoming: Preliminary results. In Ecology and conservation of lynx in the United States, edited by L.F. Ruggiero, K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey and J.R. Squires, p. 337-348. Vol. RMRS-GTR-30WWW. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Fort Collins, Colorado.

Squires, J.R., N.J. DeCesare, L.E. Olson, J.A. Kolbe, M. Hebblewhite, and S.A. Parks. 2013. Combining resource selection and movement behavior to predict corridors for Canada lynx at their southern range periphery. *Biological Conservation* 157:187-195.

State of Utah. 2013. Conservation Plan for Greater Sage-grouse in Utah. Available at: http://wildlife.utah.gov/learn-more/greater-sage-grouse.html, accessed February 14, 2013.

State of Wyoming. 2003. Greater Sage-Grouse Conservation Plan for Wyoming.

State of Wyoming: Office of the Governor. 2011. Greater Sage-Grouse Core Area Protection. State of Wyoming Executive Department, Cheyenne, Wyoming.

Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians*. 3rd edition. Houghton Mifflin Company, Boston, Massachusetts.

Stehn, T. 2007. Whooping Cranes and Wind Farms - Guidance for Assessment of Impacts. U.S. Fish and Wildlife Service, Unpublished draft.

Stenseth, N.C., W. Falck, O.N. Bjornstad, and C.J. Krebs. 1997. Population regulation in snowshoe hare and Canadian lynx: Asymmetric food web configurations between hare and lynx. *Proceedings of the National Academy of Sciences of the United States of America* 94:5147-5152. Stiver, S.J., A.D. Apa, J.R. Bohne, S.D. Bunnell, P.A. Deibert, S.C. Gardner, M.A. Hilliard, C.W. McCarthy, and M.A. Schroeder. 2006. Greater Sage-Grouse: Comprehensive Conservation Strategy. Western Association of Fish and Wildlife Agencies, Cheyenne, Wyoming.

Tacha, T.C., S.A. Nesbitt, and P.A. Vohs. 1992. Sandhill Crane (*Grus canadensis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Taylor, S.E. and J.R. Young. 2006. A Comparative Behavioral Study of Three Greater Sage-grouse Populations. *The Wilson Journal of Ornithology* 118:36-41.

Terres, J.K. 1980. *The Audubon Society Encyclopedia of North American Birds*. Alfred A. Knopf and Random House Publishers, New York, New York.

Thompson, B.C., A. Jerome, J.A. Jackson, J. Burger, L.A. Hill, E.M. Kirsch, and J.L. Atwood. 1997. Least Tern (*Sternula antillarum*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Thompson, K.M., M.J. Holloran, S.J. Slater, J.L. Kuipers, and S.H. Anderson. 2006. Early Brood-Rearing Habitat use and Productivity of Greater Sage-grouse in Wyoming. *Western North American Naturalist* 66:332-342.

Thompson, T.R. 2012. Dispersal Ecology of Greater Sage-grouse in Northwestern Colorado: Evidence from Demographic and Genetic Methods. PhD Dissertation. University of Idaho, Moscow.

Tobalske, B.W. 1997. Lewis's Woodpecker (*Melanerpes lewis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Tumlison, R. 1987. Felis lynx. Mammalian Species 269:1-8.

Tuttle, M.D. 2006. The Life and Times of the Little Brown Myotis. *Bat Conservation International* 24(1):1-5.

Tyus, H.M. and C.W. McAda. 1984. Migration, Movements and Habitat Preferences of Colorado Squawfish, *Ptychocheilus lucius*, in the Green, White, and Yampa Rivers, Colorado and Utah. *The Southwestern Naturalist* 29(3):289-299.

U.S. Fish and Wildlife Service (FWS). 1982. Clay Phacelia (*Phacelia argillacea*) Atwood Recovery Plan. Mountain-Prarie Region (6), Denver, Colorado.

___. 1988a. Great Lakes and Northern Great Plains Piping Plover Recovery Plan. Twin Cities, Minnesota.

FWS. 1988b. Black-footed Ferret Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1990a. Uinta Basin Hookless Cactus (*Sclerocactus glaucus*) Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1990b. Humpback Chub Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1990c. Recovery Plan for the Interior Population of the Least Tern (*Sterna antillarum*).

___. 1993. Barneby Ridge-Cress (*Lepidium barnebyanum*) Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1994a. Utah reed-mustards: Clay reed-mustard (*Schoenocrambe argillacea*), Barneby reed-mustard (*Schoenocrambe barnebyi*), Shrubby reed-mustard (*Schoenocrambe suffrutescens*) recovery plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1994b. Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Colorado River Endangered Fishes: Razorback Sucker, Colorado Squawfish, Humpback Chub, and Bunytail Chub. *Federal Register* 59(54):13374-13400.

___. 1995a. Utah Pediocactus: San Rafael Cactus (*Pediocactus despainii*) and Winkler Cactus (*Pediocactus winkleri*) Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1995b. Ute Ladies'-tresses (*Spiranthes diluvialis*) Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 1996. *Platanthera praeclara* (Western prairie fringed orchid) Recovery Plan. Ft. Snelling, Minnesota. vi+ 101 pp.

___. 1999a. June Sucker (*Chasmistes liorus*) Recovery Plan. Mountain-Prairie Region, Denver, Colorado.

___. 1999b. Endangered and Threatened Wildlife and Plants; Final Rule To Remove the American Peregrine Falcon From the Federal List of Endangered and Threatened Wildlife, and To Remove the Similarity of Appearance Provision for Free-Flying Peregrines in the Conterminous United States. *Federal Register* 64(50) 46542-46557.

___. 2002a. Colorado Pikeminnow (*Ptychocheilus lucius*) Recovery Goals: Amendment and Supplement to the Colorado Pikeminnow Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 2002b. Razorback Sucker (*Xyrauchen texanus*) Recovery Goals: Amendment and Supplement to the Razorback Sucker Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 2002c. Bonytail (*Gila elegans*) Recovery Goals: Amendment and Supplement to the Bonytail Chub Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 2002d. Humpback Chub (*Gila cypha*) Recovery Goals: Amendment and Supplement to the Humpback Chub Recovery Plan. Mountain-Prairie Region (6), Denver, Colorado.

___. 2002e. Final Recovery Plan Southwestern Willow Flycatcher (*Empidonax taillii extimus*). Southwest Region (2), Albuquerque, New Mexico.

___. 2005a. Final Environmental Assessment - Designation of Critical Habitat for the Southwestern Willow Flycatcher.

FWS. 2005b. Recovery Outline for the Contiguous United States Distinct Population Segment of Canada Lynx (*Lynx canadensis*). Montana Field Office, Helena, MT.

___. 2007a. Recovery Outline for San Rafael Cactus (*Pediocactus despainii*) and Winkler Cactus (*Pediocactus winkleri*). Utah Ecological Services, West Valley City.

___. 2007b. Species Assessment and Listing Priority Assignment Form - *Penstemon scariosus* var. *albifluvis*. Mountain-Prairie Region (6), Denver, Colorado.

___. 2007c. Pallid Sturgeon (*Scaphirhynchus albus*) 5-Year Review: Summary and Evaluation. Montana Ecological Services Office, Billings.

___. 2008a. Wright Fishhook Cactus (*Sclerocactus wrightiae*), 5-Year Review: Summary and Evaluation. Utah Ecological Services, West Valley City.

___. 2008b. Black-footed Ferret (*Mustela nigripes*) 5-Year Status Review: Summary and Evaluation. South Dakota Field Office, Pierre.

___. 2008c. Recovery Outline for the Jones Cycladenia (*Cycladenia humilis* var. *jonesii*). Utah Ecological Services, West Valley City.

___. 2008d. FWS Biological Opinion for BLM Resource Management Plan (RMP), Price Field Office. Utah Ecological Services, West Valley City.

___. 2008e. 5-year Review Short Form Summary - Uinta Basin Hookless Cactus (*Sclerocactus glaucus*). Mountain-Prairie Region (6), Denver, Colorado.

___. 2009a. Western prairie fringed orchid (*Platanthera praeclara*) 5-Year Review: Summary and Evaluation. Ft. Snelling, Minnesota. ii+ 36 pp.

___. 2009b. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. Northeast Region (5) and Midwest Region (3), Hadley, Massachusetts and Bloomington, Minnesota.

___. 2009c. Donations Triple Reward for Information on Shooting of Whooping Crane Near Cayuga, Indiana. U.S. Fish and Wildlife Service News, Midwest Region (3), Bloomington, Minnesota.

___. 2009d. Whooping Cranes and Wind Development - An Issue Paper. Southwest Region (2) and Mountain-Prarie Region (6), Albuquerque, New Mexico and Denver, Colorado.

___. 2010. *Schoenocrambe suffrutescens* (Shrubby Reed-mustard) 5-Year Review: Summary and Evaluation. Available at: https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1N9, accessed November 3, 2011.

___. 2011a. *Lepidium barnebyanum* (Barneby ridge-cress) 5-Year Review: Summary and Evaluation. Utah Ecological Services, West Valley City.

___. 2011b. Federally Listed and Proposed Endangered, Threatened and Candidate Species and Critical Habitat in Utah – Species List by County. Utah Ecological Services, West Valley City.

FWS. 2011c. U.S. Fish and Wildlife Service Species Assessment and Listing Priority Assignment Form: *Penstemon scariosus* var. *albifluvis*. Available at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q2QI, accessed November 2, 2012.

___. 2011dc. GIS shapefiles depicting *Physaria obcordata* Section 7 range. GIS data received on October 14, 2011, from the U.S. Fish and Wildlife Service.

___. 2011a. *Lepidium barnebyanum* (Barneby ridge-cress) 5-Year Review: Summary and Evaluation. Utah Ecological Services, West Valley City.

___. 2011e. *Schoenocrambe argillacea* (clay reed-mustard) 5-Year Review: Summary and Evaluation. Utah Ecological Services, West Valley City.

___. 2011f. *Astragalus deserticus* Desert Milk-vetch 5-Year Review: Summary and Evaluation. Utah Ecological Services, West Valley City.

___. 2012a. National Wetlands Inventory. Available at: http://www.fws.gov/wetlands/, accessed August 22, 2013.

___. 2012b. Birds of Conservation Concern. Available at: http://www.nabci-us.org/map.html, accessed Fall 2012.

___. 2012c. U.S. Fish and Wildlife Service Species Reports: Listed Plants. Environmental Conservation Online System. Available at: http://ecos.fws.gov/tess_public/pub/listedPlants.jsp , accessed October 30, 2012.

___. 2012d. Recovery plan for the Mexican spotted owl. Southwest Region (2), Albuquerque, New Mexico.

___. 2012e. Species of Concern: Raptors in Wyoming. Wyoming Ecological Services, Cheyenne, Wyoming, available at http://www.fws.gov/wyominges/Pages/Species/Species_SpeciesConcern/Raptors.html.

___. 2013. Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States; Establishment of a Nonessential Experimental Population of the North American Wolverine in Colorado, Wyoming, and New Mexico; Proposed Rules. Federal Register 78(23):7864-7890.

___. 2014a. IPaC (Information, Planning, and Conservation System) information for Carbon and Sweetwater counties, Wyoming. Online database, available at http://ecos.fws.gov/ipac/, accessed August 6, 2014.

___. 2014b. IPaC (Information, Planning, and Conservation System) information for Garfield, Mesa, Moffat, Rio Blanco, and Routt counties, Colorado. Online database, available at http://ecos.fws.gov/ipac/, accessed August 6, 2014.

___. 2014c. IPaC (Information, Planning, and Conservation System) information for Carbon, Duchesne, Emery, Grand, Juab, Sanpete, Uintah, Utah, and Wasatch counties, Utah. Online database, available at http://ecos.fws.gov/ipac/, accessed August 6, 2014.

FWS. 2015. ECOS (Environmental Conservation Online System) information for North American Wolverine (*Gulo gulo luscus*). Online database, available at http://ecos.fws.gog/speciesprofile/, accessed April 3, 2015.

U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service, U.S. Geological Survey, and EPG. 2013. Summary of meeting, the purpose of which was to discuss issues and approaches for addressing clay phacelia (*Phacelia agrillacea*) in relation to the Energy Gateway South Transmission Project. February 28, 2013.

U.S. Forest Service (USFS). 1986a. Land and Resource Management Plan for the Ashley National Forest. Vernal, Utah.

___. 1986b. Land and Resource Management Plan Manti-LaSal National Forest. Price, Utah.

___. 2003. Final Environmental Impact Statement for Uinta National Forest Land and Resource Management Plan. Salt Lake City, Utah.

___. 2013a. GIS shapefiles depicting occurrences of noxious weeds in the Ashley, Mant-La Sal, and Uinta National Forests. GIS data received April 2013 from Terry Miller, USFS Botanist.

___. 2013b. Intermountain Region (R4) Threatened, Endangered, Proposed, and Sensitive Species: Known and Suspected Distribution by Forest. Ogden, Utah.

U.S. Geological Survey (USGS). 2004. Nonindigenous Aquatic Species Database. Gainesville, FL. Available at: http://nas.er.usgs.gov/.

___. 2008. Southwestern Willow Flycatcher. USGS Forest and Rangeland Ecosystem Science Center, Colorado Plateau Field Station at Northern Arizona University. Flagstaff. Available at: http://sbsc.wr.usgs.gov/cprs/research/projects/swwf/cprsmain.asp.

___. 2012. Bird Checklists of the United States: Ouray National Wildlife Refuge. Available at: http://www.npwrc.usgs.gov/old_web/resource/birds/chekbird, accessed January 27, 2012.

University of Idaho. 2010. Northwest Gap Analysis Program. U.S. Geological Survey, Moscow, Idaho.

University of Idaho. 2012. Northwest Gap Analysis Program. U.S. Geological Survey, Moscow, Idaho.

Utah Department of Agriculture and Food. 2009. County Declared Noxious Weeds in Utah. Available at: http://ag.utah.gov/plants-pests/noxious-weeds.html, accessed October 1, 2012.

Utah Department of Agriculture and Food. 2010. Utah Noxious Weed List. Available at: http://ag.utah.gov/plants-pests/noxious-weeds.html, accessed October 1, 2012.

Utah Department of Natural Resources (UDNR). 2008. Utah Conservation Data Center Available at: http://dwrcdc.nr.utah.gov/ucdc/.

Utah Division of Wildlife Resources (UDWR). 1997. Inventory of Sensitive Species and Ecosystems in Utah. Paper No. 402, Salt Lake City.

___. 1998. Inventory of Sensitive Species and Ecosystems in Utah. Prepared for the Utah Reclamation Mitigation and Conservation Commission and the U.S. Department of the Interior. Prepared by Utah Division of Wildlife Resources, Salt Lake City.

UDWR. 2000. White-faced Ibis (*Plegadis chihi*). State of Utah Natural Resources, Division of Wildlife Resources. Salt Lake City, Utah.

___. 2005a. Utah Comprehensive Wildlife Conservation Strategy. Salt Lake City.

___. 2005b. Plant Information Compiled by the Utah Natural Heritage Program: A Progress Report. Salt Lake City.

UDWR. 2008. *Utah Bighorn Sheep Statewide Management Plan.* Available at: www.wildlife.utah.gov

___. 2009a. Greenback Trout Gets Protection. Available at: http://wildlife.utah.gov/wildlife-news.html?limitstart=0 , accessed Fall 2012.

___. 2009b. Utah Greater Sage-grouse Management Plan. Publication Number 09-17, Salt Lake City.

___. 2009c. Rangewide Conservation Agreement and Strategy for Northern Leatherside (*Lepidomeda copei*). Publication Number 09-11, Salt Lake City.

___. 2010b. Conservation Agreement and Strategy for Northern Leatherside (*Lepidomeda aliciae*) in the State of Utah. Publication Number 10-19, Salt Lake City.

___. 2011a. Utah Sensitive Species List.. State of Utah Department of Natural Resources. Division of Wildlife Resources. Salt Lake City, Utah.

___. 2011b. Utah's State Listed Species by County. Utah Division of Wildlife Resources, Utah Conservation Data Center, Salt Lake City.

___. 2011c. GIS shapefiles depicting sage-grouse occupied habitat in Utah. GIS data received March 27, 2012 from Utah Division of Wildlife Resources.

___. 2013a. GIS shapefiles depicting occupied sage-grouse leks in Utah. GIS data received on August 10, 2011, Salt Lake City.

___. 2013b. Recommended seasonal restrictions and BMPs for development in wildlife habitats in Utah. Excerpt from unpublished document emailed to EPG on September 30, 2013.

___. 2014. Wolverine photographed in the Uintas. http://wildlife.utah.gov/wildlife-news/1448-wolverine-photographed-in-the-uintah.html.

Utah Native Plant Society (UNPS). 1989. Report for 1989 Challenge Cost Share Project, Uinta National Forest. Target species: *Phacelia argillacea* Atwood (Clay phacelia). Prepared by M.A. “Ben” Franklin and J.S. Tuhy.

___. 2011. Utah Rare Plant Guide [online], edited by A.J. Frates. Available at: www.utahrareplants.org, accessed November 2011.

___. 2012. Utah Rare Plant Guide [online], edited by A.J. Frates. Available at: www.utahrareplants.org, accessed Fall 2012.

Utah Natural Heritage Program (UNHP). 2003. Vertebrate information compiled by the Utah Natural Heritage Program: A Progress Report. Salt Lake City.

UNHP. 2012. GIS shapefiles depicting locations of special status species in Utah. GIS data received on January 6, 2012 from S. Lindsey, Salt Lake City.

Utah Partners in Flight. 2012. Utah Partners in Flight Physiographic Areas. Available at: http://www.partnersinflight.org/bcps/pifplans.htm.

Valdez, R.A. and G.H. Clemmer. 1982. Life History and Prospects for Recovery of the Humpback and Bonytail Chub. In *Proceedings of a Symposium on Fishes of the Upper Colorado River System: Present and Future*, edited by W.M. Miller, H.M. Tyus, and C.A. Carlson, pp. 109-119. American Fisheries Society, Bethesda, Maryland.

Valdez, R.A., P.B. Holden, and T.B. Hardy. 1990. Habitat Suitability Index Curves for Humpback Chub of the Upper Colorado River Basin. *Rivers* 1:31-42.

Vanicek, C.D. and R.H. Kramer. 1969. Life History of the Colorado Squawfish, *Phtychocheilus lucius*, and the Colorado Chub, *Gilia robusta*, in the Green River in Dinosaur National Monument,1964-1966. *Transactions of the American Fisheries Society* 98:193-208.

Vickery, P.D. 1996. Grasshopper Sparrow (*Ammodramus savannarum*). In *The Birds of North America*, edited by A. Poole and F. Gill, pp. 239. The Academy of Natural Sciences and The American Ornithologists' Union, Philadelphia, Pennsylvania and Washington, D.C.

Wakkinen, W.L., K.P. Reese, and J.W. Connelly. 1992. Sage grouse Nest Locations in Relation to Leks. *Journal Wildlife Management* 56:381-383.

Wallestad, R.O. 1971. Summer Movements and Habitat Use by Sage grouse Broods in Central Montana. *Journal Wildlife Management* 35:129-136.

Wallestad, R.O., J.G. Peterson, and R.L. Eng. 1975. Foods of Adult Sage Grouse in Central Montana. *Journal of Wildlife Management* 39:628-630.

Wallestad, R.O. and D.B. Pyrah. 1974. Movement and Nesting of Sage grouse Hens in Central Montana. *Journal Wildlife Management* 39:630-633.

Wallestad, R.O. and P. Schladweiller. 1974. Breeding Season Movements and Habitat Selection of Male Sage grouse. *Journal of Wildlife Management* 38:634-637.

Walters, E.L., E.H. Miller, and P.E. Lowther. 2002. Red-naped Sapsucker (*Sphyrapicus nuchalis*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Wambolt, C.L., A.J. Harp, B.L. Welch, N. Shaw, J.W. Connelly, K.P. Reese, C.E. Braun, D.A. Klebenow, E.D. McArthur, J.G. Thompson, L.A. Torell, and J.A. Tanaka. 2002. Conservation of Greater Sage-grouse on Public Lands in the Western U.S.: Implications of Recovery and Management Policies. Policy Paper SG-02-02, Policy Analysis Center for Western Public Lands. Caldwell, Idaho.

Watson. 2013. Personal communication between David Watson, BLM Salt Lake Filed Office, and Jan Summerhays, EPG Plant Ecologist, concerning noxious weeds in Salt Lake Field Office. April 22, 2013.

Welsh, S.L., N.D. Atwood, and J.L. Reveal. 1975. Endangered, Threatened, Extinct, Endemis and Rare or Restricted Utah Vascular Plants. *Great Basin Naturalist* 35:327-376.

Welsh, S.L., N.D. Atwood, S. Goodrich, and L.C. Higgins. 2003. *A Utah Flora*. 3rd edition, revised. Brigham Young University, Provo, Utah.

Welsh, S.L., S. Atwood, S. Goodrich, and L.C. Higgins. 2008. *A Utah Flora*. 4th edition, revised. Brigham Young University, Provo, Utah.

Welsh, S.L., and S. Goodrich. 1980. Miscellaneous plant novelties from Alaska, Nevada, and Utah. *Great Basin Naturalist* 40:78-88.

White, C.M., M. Clayton, N.J. Clum, T.J. Cade, and W. Granger Hunt. 2002. Peregrine Falcon (*Falco peregrinus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Wilson, D.E. and D.M. Reeder (editors). 2005. Mammal Species of the World. A Taxonomic and Geographic Reference (3rd edition), Johns Hopkins University Press, 2,142 pp.

Wilson, E.C., W.A. Hubert, and S.H. Anderson. 1993. Nesting and Foraging Ecology of Least Terns on Sand Pits in Central Nebraska. *Southwestern Naturalist* 38:9-14.

Wisdom, M.J., C.W. Meinke, S.T. Knick, and M.A. Schroeder. 2011. Factors Associated with Extirpation of Sage-grouse. In *Greater Sage-Grouse: Ecology of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 451-472. Cooper Ornithological Union, University of California Press, Berkeley.

With, K.A. 2010. McCown's Longspur (*Rhyncophanes mccownii*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Woodin, M.C. and T.C. Michot. 2002. Redhead (*Aythya americana*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Wyoming Game and Fish Department (WGFD). 2005a. Avian Species of Special Concern in Wyoming. Cheyenne.

___. 2005b. Mammalian Species of Special Concern in Wyoming. Cheyenne.

___. 2005c. A Comprehensive Wildlife Conservation Strategy for Wyoming. Cheyenne.

___. 2010a. Wyoming's State Wildlife Action Plan. Interagency Advisory Team, Cheyenne.

___. 2010b. GIS shapefiles depicting sage-grouse core areas in Wyoming GIS data received August 30, 2011.

___. 2012. GIS shapefiles depicting occupied sage-grouse leks in Wyoming. GIS data received September 2012.

Wyoming Natural Diversitiy Database (WYNDD). 2011. GIS shapefiles depicting locations of special status species locations in Wyoming. GIS data recieved September 20, 2011 from M. Arnet, Laramie.

Wyoming Partners in Flight. 2012. Wyoming Partners in Flight Physiographic Areas. Available at: http://www.partnersinflight.org/bcps/pifplans.htm, accessed Fall 2012.

Wyoming Weed and Pest Council. 2012. Weed and Pest Declared List (By County). Amended February 2012. Available at: http://www.wyoweed.org/weeds/state-designated-weeds, accessed October 1, 2012.

Yosef, R. 1994. The Effects of Fencelines on the Reproductive Success of Loggerhead Shrikes. Conservation Biology 8:281-285.

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*). The Birds of North America Online, edited by A. Poole. Cornell Lab of Ornithology. Ithaca, New York. Available at: http://bna.birds.cornell.edu/bna/species.

Young, J.R., J.W. Hupp, J.W. Bradbury, and C.E. Braun. 1994. Phenotypic Divergence of Secondary Sexual Traits Among Sage-grouse, *Centrocercus urophasianus* Populations. *Animal Behaviour* 47:1353-1362.

Appendix K

Compliance with Applicable Sage-grouse Policies, Plans, and Procedures and Applicant-proposed Mitigation

APPENDIX K – COMPLIANCE WITH APPLICABLE SAGE-GROUSE POLICIES, PLANS, AND PROCEDURES AND APPLICANT-PROPOSED MITIGATION

K.1 Introduction

The Bureau of Land Management (BLM) and several cooperating agencies participating in the preparation of the Environmental Impact Statement (EIS) for the Energy Gateway South Transmission Project (Project) have recently updated or are in the process of revising policies and plans addressing management and conservation of greater sage-grouse (*Centrocercus urophasianus*) in the Project area. These revisions are largely in response to declining greater sage-grouse populations in the western United States, agency responsibilities for sage-grouse conservation, and the U.S. Fish and Wildlife Service's (FWS) *12 Month Findings for Petitions to List the Greater Sage-grouse as Threatened or Endangered*, published in March 2010, which found that listing the species under the Endangered Species Act was warranted but precluded by higher priority listing actions. Several of these policy and sage-grouse management plan revisions have been initiated or completed since the Applicant (PacifiCorp, doing business as Rocky Mountain Power) submitted an *Application for Transportation and Utility Systems and Facilities on Federal Lands* (Standard Form 299) on November 28, 2007, initiating the BLM and cooperating agencies' review of the Project.

The BLM and cooperating agencies have collaborated to prepare the EIS in accordance with current relevant law, regulation, policies, and plans; including those guiding agency decisions that may have an impact on sage-grouse and sage-grouse habitat. This appendix addresses actions and planning undertaken by the BLM, cooperating agencies, and the Applicant to prepare the EIS and potentially develop the Project in compliance with applicable law, regulation, policies, and plans related to sage-grouse.

The BLM and cooperating agencies collaborated to prepare a *Framework for Sage-grouse Impacts Analysis for the Energy Gateway South Transmission Project* (April 2013; Exhibit F1) as an early step to addressing potential impacts on sage-grouse during preparation of the EIS. The framework outlines the analysis and potential mitigation required for agencies whose decisions pertaining to the Project are evaluated in the EIS to adequately analyze the potential effects of the Project on sage-grouse and sage-grouse habitat and potentially select an action alternative that would be consistent with agency missions and goals pertaining to sage-grouse conservation. The framework also was developed to facilitate relevant cooperating agency decisions and evaluation of compliance with applicable plans and policies that are not subject to National Environmental Policy Act review and not addressed in the EIS.

K.2 Applicable Sage-grouse Policies and Plans

K.2.1 Federal

K.2.1.1 Bureau of Land Management Washington Office Instruction Memorandum 2012-043 Greater Sage-Grouse Interim Management Policies and Procedures

On December 22, 2011, BLM issued Washington Office (WO) Instruction Memorandum (IM) 2012-043, which provides interim conservation policies and procedures for greater sage-grouse that are to be applied by BLM field offices to ongoing and proposed authorizations and activities. The purpose of the WO-IM 2012-043 is to promote sustainable greater sage-grouse populations and conserve greater sage-grouse habitat while BLM develops and decides how to best incorporate long-term conservation measures for greater sage-grouse into applicable land-use plans. The IM policies and procedures apply to BLM actions in preliminary priority habitat (PPH) and preliminary general habitat (PGH) for greater sage-grouse, which will be identified by the state wildlife agencies. (Note: The conservation policies and procedures described in the IM do not apply in areas where a state and/or local regulatory mechanism has been developed for the conservation of the greater sage-grouse in coordination and concurrence with the FWS, and the state sage-grouse plan has subsequently been adopted by the BLM through the issuance of a state-level BLM Instruction Memorandum). The WO-IM 2012-043 prescribes specific procedures for pending and future right-of-way applications in preliminary priority and preliminary general habitat. The Notice of Intent to prepare an EIS for the Project was published in the *Federal Register* on April 1, 2011, and therefore these procedures are applicable to the Project.

WO IM 2012-043 procedures for pending and future right-of-way applications in preliminary priority habitat include:

- Conduct pre-application meetings for all new right-of-way proposals consistent with the right-of-way regulations (43 Code of Federal Regulations [CFR] 2804.10) and consistent with current renewable energy right-of-way policy guidance (WO-IM-2011-061, issued February 7, 2011).
- For pending applications, assess the impact of the proposed right-of-way on greater sage-grouse and its habitat, and implement the following:
    - Ensure that reasonable alternatives for siting the right-of-way outside of the PPH or within a BLM-designated utility corridor are considered and analyzed in compliance with the National Environmental Policy Act
    - Identify technically feasible best management practices, conditions, etc. (e.g., siting, burying power lines) that may be implemented in order to eliminate or minimize impacts
- For right-of-ways where the total project disturbance from the right-of-way and any connected action is less than 1 linear mile, or 2 acres of disturbance, develop mitigation measures related to construction, maintenance, operation, and reclamation activities that, as determined in cooperation with the respective state wildlife agency, would cumulatively maintain or enhance greater sage-grouse habitat.
- For right-of-way applications where the total project disturbance from the right-of-way and any connected action is greater than 1 linear mile or 2 acres of disturbance, it is BLM policy that where a field office determines that it is appropriate to authorize a right-of-way, the following process must be followed:
    - The BLM will document the reasons for its determination and require the right-of-way holder to implement measures to minimize impacts on sage-grouse habitat.
    - In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of greater sage-grouse and its habitat.
    - Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed right-of-way and mitigation measures would cumulatively maintain or enhance greater sage-grouse habitat, the proposed right-of-way decision must be forwarded to the appropriate BLM State Director, State Wildlife Agency Director, and FWS representative for their review. If this group is unable to agree on the appropriate mitigation for the proposed right-of-way, then the proposed decision must be forwarded to the Greater Sage-Grouse

> National Policy Team with the addition of the State Wildlife Agency Director, when appropriate, for its review. If the National Policy Team and the State Wildlife Agency Director are unable to agree on the appropriate mitigation for the proposed right-of-way, the National Policy Team will coordinate with and brief the BLM Director for a final decision in absence of consensus.

The three states crossed by the Project (Wyoming, Colorado, and Utah) all have statewide sage-grouse management plans and are participating with BLM and U.S. Forest Service (USFS) in the ongoing amendments of resource management plans (RMPs) and land and resource management plans (LRMPs), respectively, and interim management of sage-grouse differently as follows:

- Wyoming has established a state regulatory mechanism for the conservation of the sage-grouse and the BLM has adopted this state strategy through the issuance of BLM IM WY 2012-019; therefore, PPH and PGH will not be designated in Wyoming. The Wyoming Core Areas have been adopted by the BLM.
- Colorado has developed PPH and PGH that focus conservation efforts on the most important habitat for the species and provides a biological basis for land use recommendations under BLM WO IM 2012-043 and is participating with the BLM in the ongoing amendments of RMPs in Colorado.
- Utah has developed a state regulatory mechanism for the conservation of sage-grouse that could be adopted by the FWS and BLM in place of the conservation measures identified in the IM and has not designated PPH and PGH. However, BLM has not adopted the state regulatory mechanism at this time. For the purposes of identifying PPH and PGH, BLM considers the Utah Division of Wildlife Resources (UDWR) occupied sage-grouse habitat layer to be synonymous with PPH in the Utah; no PGH has been identified.

K.2.1.2 U.S. Forest Service Interim Recommendations for Greater Sage-grouse and Greater Sage-grouse Habitat

On October 12, 2012 the USFS issued Interim Recommendations for Greater Sage-Grouse and Greater Sage-Grouse Habitat. Similar to BLM WO IM 2012-043, the USFS Interim Recommendations provide conservation policies and procedures for greater sage-grouse that are to be applied on National Forest system land until USFS LRMPs are incorporated to include sage-grouse conservations measures. Additionally, USFS seeks to promote consistency with BLM management of sage-grouse on BLM-administered lands under BLM WO IM 2012-043.

The USFS Interim Recommendations for Greater Sage-Grouse and Greater Sage-Grouse Habitat recommendations for nonrecreational special use proposals including power lines direct USFS to:

- Within 3 kilometers of sage-grouse habitat, avoid authorizing placement of overhead power lines or other tall structures that provide perch sites for raptors.
- Determine, in coordination with the respective state wildlife agency, whether a proposal that may affect sage-grouse or sage-grouse habitats would likely have more than minor adverse effects on sage-grouse or sage-grouse habitat.
- If the proposed use likely would have more than minor adverse effects on sage-grouse habitat:
    - Consider feasible alternatives for siting the use outside of sage-grouse habitat; and
    - Identify technically feasible best management practices in terms of siting placement of overhead power lines or other tall structures (e.g., burying power lines) that may be implemented, to avoid or minimize impacts on sage-grouse or sage-grouse habitats.

- In consultation with the state wildlife agency, develop mitigation measures for construction, maintenance, operation, and reclamation of the proposed use that minimize impacts on sage-grouse habitat.

K.2.1.3 BLM Resource Management Plans and USFS Forest Plans

Many BLM RMPs and USFS LRMPs contain land-use restrictions to promote sage-grouse conservation (e.g., limitations on development activities near sage-grouse leks). Restrictions identified in applicable plans are detailed in EIS Appendix J, Table J-12 and have been considered in the analysis presented in Chapter 3. BLM and USFS have proposed RMP and LRMP amendments in Wyoming, Colorado, and Utah to include additional sage-grouse conservation measures. The proposed BLM and USFS amendments are anticipated to be complete prior to the Record of Decision (ROD) for the Project. .

Due to overlapping timelines and objectives for the proposed BLM RMP and USFS LRMP sage-grouse amendments and the Project, any BLM RMP and USFS LRMP amendments will not apply to portions of the Project in Wyoming and Colorado and in areas of Utah that are colocated with the proposed TransWest Express Transmission Line Project. In this EIS, however, the BLM has analyzed a similar suite of mitigation measures for the greater sage-grouse and its habitat (refer to Section 3.2.8.4, Mitigation Planning and Effectiveness) and will consider the implementation of those mitigation measures in the ROD for this Project, with a goal of achieving a net conservation benefit for the greater sage-grouse and its habitat. In addition, the Applicant has committed to comply with seasonal restrictions included in the proposed BLM RMP and USFS LRMP amendments and implement additional site-specific mitigation measures.

K.2.1.4 U.S. Fish and Wildlife Service Guidance

The U.S. Fish and Wildlife Service (FWS) released the Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report in 2013 and the Greater Sage-grouse Range-wide Mitigation Framework in 2014. The Conservation Objectives report details the finding of a Conservation Objectives Team (COT) that recommended the types of threats that would need to be reduced or eliminated to conserve sage-grouse so it would not be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT report provides specific conservation objectives for energy and infrastructure projects and project-specific options for actions and measures to avoid impacts to sage-grouse and their habitats. A key component of the COT report is the identification of Priority Areas for Conservation (PACs), which represent key areas that are essential for sage-grouse conservation. The Rangewide Mitigation Framework identifies the factors that FWS will consider in evaluating the efficacy of mitigation practices and programs in reducing threats to sage-grouse. The FWS developed a checklist using the COT report and the Rangewide Mitigation Framework for reviewing new energy or infrastructure projects where such projects and activities occur in sage-grouse PACs, Preliminary Priority Habitat, Preliminary General Habitat, and/or state-designated sage-grouse habitat. The COT checklist is intended to help FWS determine if proposed energy projects and the associated infrastructure are consistent with the recommendations and guiding concepts provided in the COT report and the Rangewide Mitigation Framework.

K.2.2 State

K.2.2.1 Wyoming

The Governor of Wyoming issued Executive Order 2011-5 in June 2011. Executive Order 2011-5 replaced previous executive orders pertaining to sage-grouse in Wyoming and established a state regulatory mechanism to protect sage-grouse and sage-grouse habitat. The Executive Order established

Core Population Areas and focuses conservation efforts in these areas including limits on the density of surface disturbance and restrictions on surface occupancy and seasonal use (EIS Appendix J, Table J-10). Additionally, the Executive Order established new transmission line corridors through the Core Population Areas and implemented restrictions on development of new transmission lines within core areas outside of the established corridors.

In addition to Executive Order 2011-5, the Wyoming Game and Fish Commission adopted the Wyoming Greater Sage-grouse Conservation Plan in 2003. The plan was developed to maintain and improve sage-grouse habitats in Wyoming, provide for coordinated management across jurisdictional or ownership boundaries, and develop the statewide support necessary to assure the survival of Wyoming's sage-grouse populations. The plan is intended to be used as guidance regarding sage-grouse management by state and federal agencies in Wyoming and the Wyoming Game and Fish Commission has sought agreements with federal agencies to implement the plan.

K.2.2.2 Colorado

The Colorado Greater Sage-grouse Steering Committee published the Colorado Greater Sage-grouse Conservation Plan in 2008. The purpose of the plan is to facilitate the conservation of sage-grouse and their habitats in Colorado by supporting goals that, if achieved, would facilitate the recovery of the species and result in its removal from the state's species of concern list. Guidelines for sage-grouse protection from populations and habitat disturbance were developed as a part of the plan (EIS Appendix J, Table J-10). Colorado Parks and Wildlife works collaboratively with federal, state, and local agencies as well as local working groups to implement the recommendations included in the plan.

The Colorado Department of Natural Resources is working collaboratively with BLM during the ongoing amendment of BLM RMPs to include sage-grouse conservation measures and is providing information to FWS for consideration in its development of a listing decision for the species. This work includes the identification of sage-grouse PPH and PGH in the state as well as preparation of "The Colorado Package," a compilation of accomplishments and ongoing actions to promote sage-grouse conservation based on the strategies identified in the 2008 Colorado Greater Sage-grouse Conservation Plan.

K.2.2.3 Utah

The Governor of Utah approved the Conservation Plan for Greater Sage-grouse in Utah in April 2013 and issued Executive Order 2015/001 in February 2015 directing state agencies to implement the Plan. The plan is designed to eliminate the threats facing sage-grouse while balancing the economic and social needs of the residents of Utah by establishing incentive-based conservation programs for private, local government, and School and Institutional Trust Lands Administration lands and regulatory programs on other state- and federally managed lands. To achieve this goal, the plan establishes sage-grouse management areas and implements management protocols in these areas. Management provisions in sage-grouse management areas include seasonal and spatial restrictions on development activities, limits on extent of new cumulative permanent disturbance, and special provisions for electric transmission lines.

The BLM has coordinated with the state regarding the consistency of the Project with the management provisions for transmission lines included in the *Conservation Plan for Greater Sage-grouse in Utah*. BLM will continue to coordinate with the state regarding consistency of the Applicant's Sage-grouse Mitigation Plan with additional mitigation that may be required in the *Conservation Plan for Greater Sage-grouse in Utah.*

Additionally, the UDWR published the Utah Greater Sage-grouse Management Plan in 2009. The plan identifies threats and issues affecting sage-grouse management in Utah as well as goals, objectives, and strategies intended to guide UDWR, local working groups, and land managers efforts to protect, maintain, and improve sage-grouse populations and habitats and balance their management with other resource uses.

K.2.3 Local

K.2.3.1 Local Area Working Groups

The Project could cross sage-grouse habitats in the boundaries of eight sage-grouse local working groups; three in Utah (Uinta Basin, Strawberry Valley, and Castle Country), three in Colorado (Northwest Colorado, Piceance/Parachute/Roan Creek, and Pinon Mesa), and 2 in Wyoming (Bates Hole/Shirley Basin and South-central Wyoming). Each local working group has prepared a conservation plan to assess the status of local populations, to provide guidance and recommendations to meet objectives for maintaining sage-grouse populations and improving habitat, and to promote incorporation of local knowledge and local participation in larger efforts to promote conservation of sage-grouse.

K.3 Coordination and Actions Taken to Comply With Applicable Plans and Policies

Sage-grouse and sage-grouse habitats are widespread in landscapes crossed by the alternative routes in Wyoming, Colorado, and Utah. BLM and the cooperating agencies acknowledged that alternative routes that avoid sage-grouse and sage-grouse habitat would not be feasible early during the preparation of the EIS. The agencies collaborated with the Applicant to identify feasible strategies to avoid, minimize, and compensate for the potential effects of the Project on sage-grouse pursuant to the plans and policies described in Section K.2.

K.3.1 Project Siting

The BLM worked with the cooperating agencies and the Applicant to avoid and minimize potential effects on sage-grouse by identifying and eliminating or modifying alternative routes that would have substantially greater effects on sage-grouse or sage-grouse habitat compared to other alternative routes considered.

K.3.1.1 Routes Eliminated from Further Consideration

Transmission line alternative routes and segments included in the Applicant's Application for Transportation and Utility Systems and Facilities on Federal Lands were systematically screened and analyzed using the methods described in EIS Sections 2.5.1.1 and 2.5.1.3. Alternative routes that would have substantially higher impacts on sage-grouse and sage-grouse habitat compared to other alternative routes studied were eliminated from further consideration in the EIS. Alternative routes and segments that were eliminated from further consideration at least in part due to their impacts on sage-grouse and sage-grouse habitats include (refer to *Energy Gateway South Transmission Project Siting Study Report*, BLM 2012; EIS Section 2.5.1.1; and EIS Maps 2-3a and 2-3b):

Wyoming

- Links W17 and W18 were eliminated from consideration because they cross the Hannah sage-grouse core area outside of the utility corridor identified in the Wyoming Governor's Executive Order 2011-5 and are not parallel to an existing transmission line. Therefore, these links do not comply with the Executive Order regarding greater sage-grouse core area protection.
- Links W19 and W20 were eliminated from consideration because they cross the Hannah and South Rawlins sage-grouse core areas outside of the utility corridor identified in the Wyoming

Governor's Executive Order 2011-5 and do not parallel to an existing transmission line. Therefore, these links do not comply with the Executive Order regarding greater sage-grouse core area protection.

- Links W453, W454, W490, W491, W492, W493, and W520 were eliminated from consideration because any route using these links would be required to cross the Salt Wells sage-grouse core area outside of the utility corridor identified in the Wyoming Governor's Executive Order 2011-5 and would not be parallel to an existing transmission line. Therefore, alternative routes using these links do not comply with the Executive Order regarding greater sage-grouse core area protection. Additionally, alternative routes using these links may have substantial impacts on sage-grouse in Utah (refer to description of Links U20, U30, and U90).

Colorado

- Links C50, C45, C51, and C80 were eliminated from consideration because they cross important habitats that support some of the highest densities of breeding sage-grouse in the Northwest Colorado sage-grouse population, which is the largest sage-grouse population in Colorado.

Utah

- Links U20, U30, and U90 were eliminated from consideration because they cross important habitats occupied by the Diamond Mountain sage-grouse population, which is one of the largest and most robust sage-grouse populations of sage-grouse in Utah. Additionally, alternative routes using these links may have substantial impacts on sage-grouse in Wyoming (refer to description of Links W453, W454, W490, W491, W492, W493, and W520).
- Link U322 was eliminated from consideration because it crosses important habitats occupied by the Halfway Hollow sage-grouse population that have not been affected by previous transmission line development. Additionally, alternative routes using this link may have substantial impacts on other important sage-grouse habitats in Wyoming and Utah (refer to description of Links W453, W454, W490, W491, W492, W493, W520, U20, U30, and U90).
- Links U422 and U423 were eliminated from consideration because they are not located adjacent to an existing high-voltage transmission line and therefore would have greater impacts on sage-grouse compared to Links U425, U426, and U427, which were retained for analysis, where they cross important habitats occupied by the Strawberry/Fruitland sage-grouse population.

K.3.1.2 Revision to Alignments and Incorporation of Local Route Variations

The BLM, cooperating agencies, and the Applicant worked collaboratively to refine the alternative routes analyzed in the EIS, as practicable, to avoid or minimize effects on sage-grouse and important sage-grouse habitats. These refinements included local adjustments to the alternative routes to locate them outside of designated sage-grouse habitat or in habitats of lower value to sage-grouse and development of local route variations that would avoid important sage-grouse habitats. Segments that were refined and local route variations that were developed at least in part to reduce potential effects on sage-grouse and sage-grouse habitats include:

Wyoming

- The alignment of Link W21 was refined to reduce impacts on sage-grouse by locating the segment closer to other planned infrastructure and closer to the center of the utility corridor identified in Wyoming Governor's Executive Order 2011-5 in the Hanna sage-grouse core area.

Colorado

- The alignment of Links C61, C71, C72, and C91 were refined to reduce impacts on sage-grouse, to the extent practicable, by locating the segments farther away from known sage-grouse leks and outside of sage-grouse priority habitat used by the Northwest Colorado sage-grouse population.

Utah

- The alignment of Links U401 and U404 were refined to avoid important habitats occupied by the Anthro Mountain sage-grouse population.
- Links U409, U411, U520, U514, U516, U560, U515, U540, and U513 were developed to provide local route variations in Utah that would avoid sage-grouse leks and other important habitats occupied by the Emma Park sage-grouse population, which is one of most robust sage-grouse populations in Utah (refer to EIS Section 3.2.8.5).

K.3.2 Development of Additional Onsite Mitigation

The BLM, cooperating agencies, and the Applicant are working collaboratively to develop onsite mitigation measures that could be used to reduce impacts on sage-grouse and sage-grouse habitat in addition to the mitigation measures in applicable BLM, USFS, and state agency plans. Development of additional onsite mitigation measures to reduce potential effects on sage-grouse is ongoing and the final measures will be outlined in the Applicant's voluntary sage-grouse conservation and mitigation plan for the selected alternative route. Mitigation measures that are being considered include:

- Modification of the proposed tower design to use H-frame tubular steel structures (Selective Mitigation Measure 6 [EIS Table 2-13]) and the installation of perch deterrents on these structures (Selective Mitigation Measure 14) within 4 miles of sage-grouse leks in designated sage-grouse core areas and priority habitats to reduce potential sage-grouse predation by raptors (refer to EIS Section 3.2.8.4).
- Reduced speed limits during construction and maintenance activities to reduce risk of sage-grouse collision with moving vehicles and reduce disturbance to sage-grouse resulting from vehicle noise;
- Additional restrictions on use of herbicides in areas where sage-grouse are known to congregate;
- Special reclamation standards focused on restoring functionality and quality of sage-grouse habitat beyond the minimum standards required by agency policy;
- Expanded seasonal and spatial restrictions in important sage-grouse habitats beyond the minimum restrictions required by applicable agency policies and plans; and
- Reducing the separation between the Project and other linear infrastructure (including other transmission lines) for short distances in important sage-grouse habitats where high levels of impact on sage-grouse are anticipated.

K.3.3 Development of Offsite Mitigation

Despite removing and modifying alternative routes and segments that would have comparatively higher impacts on sage-grouse and implementing additional onsite mitigation, BLM and the cooperating agencies anticipate that implementation of any of the alternative routes analyzed in the EIS would result in high residual impacts on sage-grouse and sage-grouse habitat (refer to EIS Section 3.2.8.5). The residual impacts would not be consistent with the objectives for sage-grouse and sage-grouse habitat management identified in applicable agency plans and policies (Section K.2). In accordance with BLM

WO IM 2013-142, applicable BLM land and resource management plans, BLM mitigation policy, and other cooperating agency policies pertaining to offsite mitigation, BLM, the cooperating agencies, and the Applicant are working collaboratively to develop appropriate offsite mitigation that could be implemented to facilitate reasonable development of the Project consistent with applicable agency plans and policies pertaining to sage-grouse. To facilitate preliminary collaboration, the Applicant has convened a group of sage-grouse biologists from the BLM and cooperating agencies (the Habitat Equivalency Analysis [HEA] Technical Working Group) to provide input and guidance for developing the Applicant's Sage-grouse Mitigation Plan, including the HEA (refer to EIS Section 6.2.2.1). The methods used in the preliminary development of the Applicant's Sage-grouse Mitigation Plan, including the HEA and the types of offsite mitigation that may be considered are described in Exhibit B (Energy Gateway South Transmission Project Greater Sage-grouse Habitat Equivalency Analysis Plan).

If the BLM selects an action alternative, the BLM will require that the Applicant complete a Sage-grouse Mitigation Plan that meets BLM standards for sage-grouse management and compensatory mitigation. The BLM's standards would require that the Project be designed and built to minimize impacts on sage-grouse. Compensatory mitigation would be required to account for all direct and indirect effects on sage-grouse that may occur as a result of the Project. The amount of compensatory mitigation required would provide an overall net conservation benefit for sage-grouse from the construction and operation of the Project. In reviewing the Applicant's mitigation plan, BLM would coordinate with the FWS and the applicable state wildlife agencies. The COT checklist developed by FWS (refer to Section K.2.1.4) is one of the tools that the BLM would use to evaluate the adequacy of the Applicant's mitigation plan.

K.4 Applicant Provided Commitments for Mitigation

The following statement was prepared by the Applicant to outline the company's intention to prepare a voluntary sage-grouse conservation and mitigation plan for the selected alternative route:

> The EIS analysis describes potential Project-related impacts on sage-grouse and their habitat. These impacts have been minimized or avoided to the extent feasible by the BLM and cooperating agencies using avoidance and minimization measures (e.g., seasonal restrictions) from applicable BLM, USFS, and other applicable land-use and conservation plans. After application of these avoidance and mitigation measures, the BLM analysis indicates that impacts on sage-grouse and their habitat are likely to occur as a result of implementation of the Project. To meet requirements of BLM IM 2012-043, October, 2012 USFS Manual updates, and other applicable agency policies, Rocky Mountain Power will take voluntary actions to avoid, minimize, and compensate for the Project's effects on sage-grouse and their habitat.
>
> The agencies have developed a framework for Sage-grouse Impacts Analysis for the Energy Gateway South Transmission Project. The framework is used by the Applicant and the agencies to identify and analyze Project-related impacts and develop adequate mitigation. The framework identifies the use of a Habitat Equivalency Analysis (HEA), conducted by the project Applicant, as a replicable method for determining mitigation that is scaled to Project-related permanent and interim losses of sage-grouse habitat services.
>
> In coordination with the agencies, Rocky Mountain Power will develop a voluntary sage-grouse conservation and mitigation plan for the preferred alternative route. The final plan will document Rocky Mountain Power's offer of scaled mitigation and other voluntary Applicant-committed mitigation measures for sage-grouse. The mitigation plan will offer measures to avoid, minimize, or compensate for all Project effects characterized by the framework and identified in the EIS that could not be mitigated or avoided using

measures in BLM or other agency plans, including losses of habitat services quantified using the HEA.

K.4.1 Energy Gateway South Transmission Project Greater Sage-grouse Habitat Equivalency Analysis Plan

The *Energy Gateway South Transmission Project Greater Sage-grouse Habitat Equivalency Analysis Plan*, developed by the Applicant in coordination with the HEA Technical Working Group (refer to EIS Section 6.2.2.1) is included as Exhibit K2.

Exhibit K1

Framework for Sage-grouse Impacts Analysis

Framework for Sage-grouse Impacts Analysis for the Energy Gateway South Transmission Project

December 3, 2013

(1) Evaluation of Direct and Indirect Impacts - This portion of the overall Greater Sage-Grouse (hereafter sage-grouse) Impacts Assessment Framework addresses Project-related habitat impacts that bear directly on listing factors considered by the U.S. Fish and Wildlife Service (FWS) when evaluating the need to provide full listing protection under the Endangered Species Act (ESA).

A starting point for this analysis is a thorough review of the threats assessment/five factor analysis that FWS conducted as part of the March 23, 2010 (75 FR 13910), listing of the sage-grouse as a Candidate under ESA. An evaluation of all potential threats to sage-grouse and sage-grouse habitat from the transmission line should be conducted incorporating the latest available scientific information—most of which is referenced in the *Federal Register* notice itself.

Of particular importance is the synthesis evaluation of all potential threats of the Project that operate cumulatively to impact sage-grouse populations and habitat in a way that is not adequately evaluated by examining threats independently. The direct, indirect and cumulative impacts analysis for the Project should consider the *Federal Register* notice cumulative threats assessment summary as an example of how to fully analyze impacts associated with the proposed project. Reference to additional scientific information published since the issuance of the *Federal Register* notice is available on the FWS website and should be incorporated into the analysis: Best available scientific information should be used in the direct, indirect and cumulative impacts analysis.

A project environmental affects analysis of sage-grouse populations that attend leks within 18 kilometers of the Project is a critical component of an indirect impacts analysis for the species. Sage-grouse that attend leks up to 18 kilometers from the Project may be indirectly affected by the loss of habitat functionality during other seasons of the year (Connelly et.al. 2000). The construction of a transmission project or other linear facility may pose additional hindrance of seasonal migration patterns or avoidance of important seasonal habitats once used extensively by local sage-grouse populations. Qualitative and quantitative measures of habitat change must be considered in describing the potential impacts of the Project. In the context of managing a species that requires such a large landscape of habitats to meet their life-cycle needs, and the nature of the proposed disturbance, it is reasonable to make some assumptive predictions about the relative impacts within 18 kilometers.

(2) Addressing Direct Loss of Birds - This piece of the overall Greater Sage-Grouse Impacts Assessment Framework is an important contribution to the range wide jeopardy analysis conducted as part of the informal conferencing process for this Candidate species. Additionally, addressing impacts on populations provides key information needed for completing any potential future formal Section 7 consultation that would be required if the sage-grouse is ultimately listed under ESA during project development, thereby significantly streamlining this process.

FWS is actively working on this issue as it relates to range wide sage-grouse conservation. There are two ways that the Applicant is expected to help resolve this concern:

(a) Work closely with FWS and state agency biologists to develop an approach to address loss of birds from Project-related impacts and their replacement. This will include development of a monitoring plan utilizing best and most current scientific methods for estimating loss of birds during both construction and operational periods after the Project is constructed. Monitoring would be conducted using a BACI design (preconstruction, post-construction, and control site monitoring) to compare changes in local populations and habitat use that could occur in the analysis area.

(b) Contribute financially to research projects that have been designed specifically to address this issue.

(3) Mitigation - An impacts analysis that has been conducted in coordination with agency biologists—leading to an adequate understanding of impacts on sage-grouse populations and habitat—is necessary to identify mitigation needs and to develop mitigation plans that focus on the amount and locations of impacts and commensurate mitigation measures and actions. Discussion and evaluation of mitigation should be relevant to local identified impacts and with the understanding that mitigation ratios will remain the same across state lines. That is, a bird in Wyoming is equivalent to one in Colorado or Utah; an acre of nesting habitat in Colorado is worth as much in Wyoming and Utah; etc. Mitigation actions should also focus on localized replacement of ecological values for GSG impacted by the Project with replacement, recovery, or compensation of habitat values planned to be located as closely as possible to where the impacts occurred. However, biological factors may provide a valid basis for adjusting the minimal mitigation ratio beyond one-to-one replacement of values. Three such factors may but are not limited to include: (a) the best available scientific information regarding the relative value of sage-grouse populations contributing to long-term species viability across the species' range points to the relative importance of central and southwestern Idaho, central and northwestern Nevada, eastern Oregon, and the state of Wyoming or other regionally vital populations; (b) regarding individual birds, hens have a much higher biological value, in terms of contribution to populations, than males; and (c) localized habitats of high ecological value including (but not limited to) those serving key functions in demographic, genetic, or seasonal connectivity, important wintering areas, or leks.

There will be two primary components of mitigation, a Project-wide mitigation plan and the Habitat Equivalency Analysis (HEA) described in this section. The mitigation plan will include the HEA as articulated below, as well as any other impacts as identified in the EIS (i.e., indirect impacts) and associated mitigation not included in the HEA.

(a) An overarching Project-wide sage-grouse mitigation plan will be developed that includes a description of all Project-related impacts and mitigation measures that will be used to offset/compensate for them.

(b) The HEA provides a standardized basis to determine a one-to-one ratio for habitat services lost/ habitat services mitigated. For this Project, functionality of habitat to support sage grouse is the habitat service of interest. Habitat services lost can be quantified and where possible replacement habitat services of equal kind and value would be provided as mitigation. However, replacement of in-kind habitat services may not be possible in all locations, so habitat services ratio of services lost to services replaced may be greater than 1:1 in some areas

HEA is a method of quantifying the permanent or interim loss of habitat services from Project-related impacts. HEA provides a scientific-based, peer-reviewed method of scaling mitigation requirements, and has been used by federal regulatory agencies including the FWS and National Oceanic and Atmospheric Administration. The HEA is not meant to be an impacts analysis in and of itself; rather, it is a way to objectively determine quantity of Project-related habitat impacts and provides the quantity and type of mitigation necessary to offset loss of habitat services as a form of output.

The HEA process for Gateway South is an Applicant-lead effort that requires close collaboration with state agencies in states sustaining most of the impacts on populations and habitat (Wyoming, Colorado, and Utah) as well as FWS and BLM biologists and local working groups to ensure adequacy of analysis and a corresponding final product. Building models associated with the HEA process must be done in close coordination with agency biologists and local working groups in order to address concerns, questions, assumptions, and issues as they arise.

Agency biologists recognize the need for the incorporation of data and information in the HEA models that the Applicant may not currently have. Agency biologists will work with the Applicant to obtain such information to the extent they can (e.g., habitat maps; adequate vegetation data) again, reiterating the need for an interactive approach between the Applicant and agency biologists in order to ensure adequate completion of the HEA.

The initial starting point for evaluating direct and indirect impacts on sage-grouse habitat will be 18 kilometers either side of the proposed transmission line, addressing impacts on roughly 98 percent of nesting hens according the best available scientific information. Any deviation from this starting point must be supported by scientific literature and collaboratively determined to be appropriate if habitats do not extend to those distances: agency biologists can direct the Applicant to recently published literature on this topic which the Applicant is encouraged to use.

Calculating Density of Disturbance within Key Habitat (Applied in Wyoming only)

Once the analysis is complete and an alternative has been selected, an additional site-specific evaluation of density of disturbance within Key Habitats/Core Areas may be conducted. The purpose of this evaluation is to evaluate opportunities to (1) minimize density of disturbance within Key Habitats/Core Areas that are outside the designated disturbance corridor identified in the Wyoming Governor's Executive Order 2011-5 and (2) restore and/or enhance important sage-grouse habitat as a part of Project-related mitigation. These site-specific habitat evaluations also will enable BLM to: (a) demonstrate compliance with the *Greater Sage-Grouse Habitat Management Policy on Wyoming BLM Administered Public Lands including Federal Mineral Estate* (IM WY-2010-012); and (b) demonstrate consistency with the *Greater Sage-Grouse Core Area Protection*, Wyoming Governor's Executive Order 2011-5. In Colorado and Utah, if density disturbance calculations are completed, they will be closely coordinated with the appropriate state and federal agencies to ensure that each state's Key Habitat areas are appropriately identified and considered in the Density disturbance calculation (DDC).

The overall goal of a Sage-Grouse Key Habitat/Core Area Strategy is to limit the density and duration of disturbances and restrict activities within Key Habitats/Core Areas sufficient to ensure the long-term conservation and management of sage-grouse within each state. To this end, the DDC is a tool designed to measure habitat loss within the Key Habitat/Core Area. In particular, in Wyoming, it is used to determine—in terms of management actions— how the Project-related disturbance can be limited to no more than 5 percent loss of habitat and result in no more than an average of one disturbance per 640 acres.

Step 1: Determination of leks that will be used in the site-specific evaluation:
Place a four-mile boundary around the outer Project boundary (as defined by the proposed area of disturbance related to the Project, i.e., right-of-way width, or similar). All occupied and undetermined sage-grouse leks located within four miles of the outer boundary of the Project, and within Key Habitat/Core Areas, the will be considered in the DDC.

Step 2: Determine the DDC area size and configuration:
A four-mile boundary placed around the perimeter of each lek identified in Step 1 and the area within the boundary of the leks, plus the four-mile Project boundary, creates the DDC area for the Project.

Step 3: Density of disturbance habitat evaluation:
Disturbance will be evaluated for the DDC area as a whole, as well as for individual leks within the DDC area. Any portion of the DDC that falls outside Key Habitat/Core Area will be removed from this portion of the evaluation for Wyoming to maintain consistency with the provisions in Wyoming Executive Order 2011-5.

Disturbance Calculation: Total acres of "disturbance" within the DDC area will be determined through an evaluation of:

a. Existing and proposed disturbance—sage-grouse habitat that is disturbed by existing anthropogenic features or activities (e.g., transmission lines, distribution lines, wind development, oil/gas wells/facilities, active mine areas, geothermal, communication towers, pipelines, paved and improved roads, and others) and wildfire, including the full right-of-way width of the Proposed Action;

b. Approved permits (i.e., any state or federal permits providing approval for on the ground actions) for projects not yet implemented or constructed.

Habitat Disturbance Evaluation: In Wyoming, for projects that will result in disturbance of more than 5 percent of the DDC area, it may be advantageous for the Applicant to map the full extent of sage-grouse habitat within the DDC area in order to reduce this percentage. If this is done, it will be conducted to identify:

a. "Suitable Habitat" and "Marginal Habitat" using BLM's Habitat Assessment Framework and unsuitable habitats within the DDC area
b. Sage-grouse evidence of use of suitable habitats (seasonal use, densities based on best available information)
c. Priority restoration areas (which could reduce the existing disturbances to below the 5 percent threshold), for example:
    i) Areas where plug and abandon activities on retired oil and gas wells will eliminate disturbance
    ii) Areas where past reclamation has not produced suitable habitat
d. Areas of invasive species
e. Lands where other conservation assurances are in place (e.g., candidate conservation agreement with assurances, easements, habitat contract, etc.)

Step 4: Determination of existing and allowable suitable habitat disturbance:
Acres of disturbance within suitable habitat divided by the total suitable habitat within the DDC area, multiplied by 100, represents the percent of disturbed suitable habitat within the DDC area. In Wyoming, subtracting the percentage of existing disturbed suitable habitat from 5 percent equals new allowable suitable habitat disturbance until plant regeneration or reclamation reduces acres of disturbed habitat within the DDC area.

Exhibit K2

Greater Sage-grouse Habitat Equivalency Analysis Plan

Final: Energy Gateway South Transmission Project Greater Sage-grouse Habitat Equivalency Analysis

Prepared by

Rocky Mountain Power – PacifiCorp

July 2015

FINAL: Energy Gateway South Transmission Project
Greater Sage-grouse Habitat Equivalency Analysis

Prepared by

Rocky Mountain Power, a subsidiary of PacifiCorp
1407 West North Temple
Salt Lake City, Utah 84116

July 7, 2015

Table of Contents

1.0 Project Overview 1
2.0 Overview of Habitat Equivalency Analysis 4
  2.1 What Does Habitat Equivalency Analysis Do? 4
    2.1.1 Benefits of Habitat Equivalency Analysis 5
    2.1.2 When Habitat Equivalency Analysis Should Be Used 5
  2.2 Compensation Components 5
  2.3 Measuring Habitat Services (Ecological Economics) 7
3.0 Overview of the Habitat Equivalency Analysis Process for the GWS Project 7
4.0 USFWS Conservation Framework for Greater Sage-grouse 8
  4.1 General Conservation Objectives 9
5.0 Overview of the Habitat Equivalency Analysis Methods Used 10
  5.1 Development of Habitat Service Metric 11
  5.2 Quantification of Habitat Service Losses 14
    5.2.1 Baseline 18
    5.2.2 Construction 18
    5.2.3 Restoration 25
    5.2.4 Recovery 25
  5.3 Quantification of Conservation Benefit to Habitat Services 26
6.0 Habitat Equivalency Analysis Results 29
  6.1 HEA Habitat Service Loss Results 29
  6.2 HEA Conservation Benefit Results 29
  6.3 Application of Results to a Mitigation Package 32
7.0 Literature Cited 32

List of Tables

Table 1. Anthropogenic and Habitat Variables Used as a Metric of Greater Sage-grouse Habitat Services 13
Table 2. Direct Disturbance Levels Modeled by GWS Project Year and Disturbance Type 16
Table 3. Indirect Disturbance Levels Modeled by GWS Project Year and Disturbance Type 17
Table 4. Potential Mitigation Projects Modeled in the HEA 28
Table 5. Habitat Services Lost in the Analysis Area Over the Lifetime of the GWS Project 30
Table 6. Mean Present Value Habitat-Service-Acre Gained and Average Cost for Each Habitat Conservation Measure 31

List of Figures

Figure 1. Project location. 2
Figure 2. Changes in habitat service level compared to the baseline service level during construction and restoration. 6
Figure 3. Changes in habitat service level with compensatory restoration. 6
Figure 4. GWS baseline HEA values (map 1 of 5). 20
Figure 5. GWS baseline HEA values (map 2 of 5). 21
Figure 6. GWS baseline HEA values (map 3 of 5). 22
Figure 7. GWS baseline HEA values (map 4 of 5). 23
Figure 8. GWS baseline HEA values (map 5 of 5). 24

List of Appendices

Appendix A Greater Sage-grouse Habitat Service Metric for the Gateway South Project
Appendix B Quantification of Baseline Habitat Service Level
Appendix C Quantification of Habitat Service Losses
Appendix D Quantification of Habitat Service Gains Produced by Habitat Restoration and Mitigation Measures
Appendix E Assignment of National Gap Analysis Program (GAP) Vegetation Classifications to Categories for HEA Modeling
Appendix F Specific Conservation Objectives and Measurements Identified in the Conservation Objectives Report (COR)

1.0 Project Overview

The Gateway South Transmission Line Project (GWS, Gateway South, or Project) is part of PacifiCorp's transmission expansion program, called Energy Gateway, which is intended to connect new and existing energy generation resources to customers throughout PacifiCorp's service territory. Energy Gateway is composed of several large-scale projects that will support increasing electric energy use and improve system reliability.

The Project is designed to provide 1,500 megawatts (MW) of new capacity needed to meet the current and forecasted needs of PacifiCorp's customers. These forecasts are based on PacifiCorp's Integrated Resource Plan as required to fulfill the regulatory requirements and guidelines established by the public utility commissions of the states served by PacifiCorp. The Integrated Resource Plan addresses the obligations of each company, pursuant to the Open Access Transmission Tariff, to plan for and to expand its transmission system in a non-discriminatory manner based on the needs of its native load and network customers.

Gateway South is independent of, and would be proposed regardless of, any particular new generation project. The transmission grid can be thought of in terms of hubs, spokes, and a backbone connecting the hubs. Each substation is a hub that receives or sends electricity along the spokes. For this system to work, a backbone of high-capacity transmission lines (including Gateway South) is needed to connect the hubs and transport the electricity from the source to the customer.

Gateway South will:

- provide long-term transmission capacity to move resources to growing load centers;
- connect Gateway West and Gateway Central, which will provide operational flexibility for the bulk electric network, increase reliability of the network, and support path ratings for each segment;
- improve capacity and reliability of other interconnected transmission lines associated with Energy Gateway;
- reduce transmission limitations on the existing system; and
- provide incremental transmission capacity planned at approximately 1,500 MW.

As proposed, the Project would be comprised of an extra high-voltage alternating current (AC) transmission line that would run between existing, planned, and proposed substations (Figure 1). The proposed single-circuit 500-kilovolt (kV) transmission line would be approximately 414 miles in length; the line would begin at the planned Aeolus Substation near Medicine Bow, Wyoming, connect to one separate proposed series compensation substation, and terminate at the existing Clover Substation near Mona, Utah. Two series compensation stations are planned between the Aeolus and Clover Substations, one in Colorado and one in Utah. Modifications at the existing Mona Substation are required to re-terminate existing lines to accommodate the nearby 500-kV termination at Clover Substation.

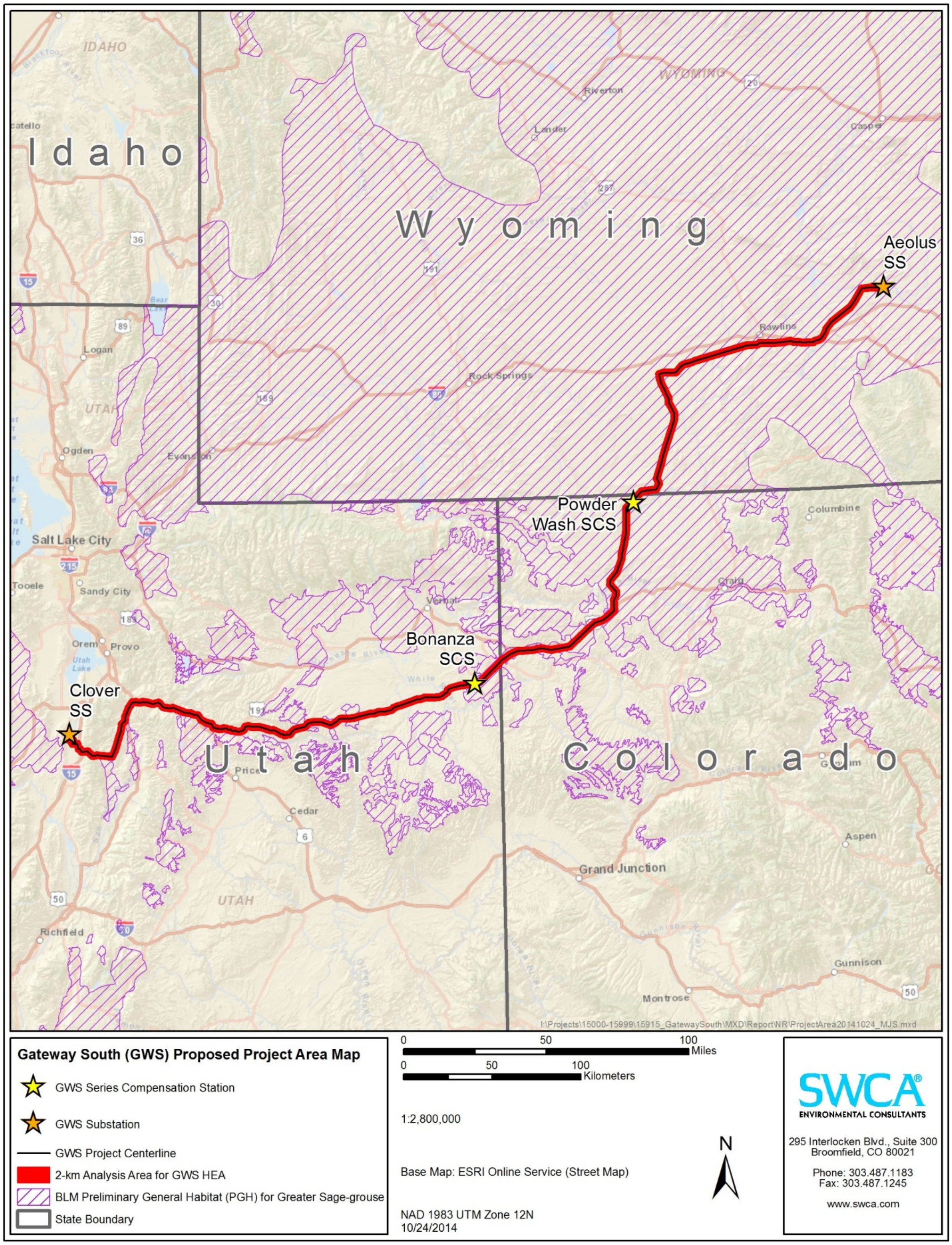


Figure 1. Project location relative to the BLM's PGH for sage-grouse, which encompasses the BLM's PPH for sage-grouse.

The Project will cross federal, state, and private lands along its route in Wyoming, Colorado, and Utah. The federal lands are primarily administered by the Bureau of Land Management (BLM). As such, PacifiCorp filed an application with the BLM to grant right-of-way (ROW) across public lands. The BLM, in compliance with the National Environmental Policy Act of 1969 (NEPA), is preparing an environmental impact statement (EIS) for Gateway South to inform its decision making on PacifiCorp's ROW grant application (BLM 2013).

The BLM, working in concert with the U.S. Fish and Wildlife Service (USFWS), developed a Framework for Sage-grouse Impacts Analysis (Framework for Impacts Analysis; January 2011), which was applied to the Energy Gateway West Project. The BLM and Rocky Mountain Power decided that the Framework for Impacts Analysis will be revised for application to Gateway South (meeting April 4, 2013). The Framework for Impacts Analysis addresses project-related impacts to greater sage-grouse (*Centrocercus urophasianus*) habitat that bear directly on listing factors considered by the USFWS when evaluating the need to provide full listing protection under the Endangered Species Act (ESA). According to the Framework for Impacts Analysis, mitigation is addressed after the NEPA-mandated impacts analysis has been conducted, resulting in an adequate understanding of impacts to sage-grouse populations and habitat, which is described in the EIS. The Framework for Impacts Analysis specifies the use of Habitat Equivalency Analysis (HEA), conducted by the project proponent, as a replicable method for determining mitigation that is scaled to project-related permanent and interim habitat losses.

The mitigation approach PacifiCorp will implement for the Project will follow the guidance provided by BLM Instruction Memorandums (IMs) IM 2013-142 (Interim Policy, Draft - Regional Mitigation Manual Section – 1794), 2012-043 (Greater Sage-Grouse Interim Management Policies and Procedures), and 2012-044 (BLM National Greater Sage-Grouse Land Use Planning Strategy), the Department of Interior Secretarial Order 3330 (Order 3330; Improving Mitigation Policies and Practices of the Department of the Interior), and the USFWS Greater Sage-grouse Range-Wide Mitigation Framework (Range-Wide Mitigation Framework; USFWS 2014). Collectively, these provide guidance for greater sage-grouse habitat management and mitigation for pending transmission ROWs in Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). These policies state that transmission ROWs having disturbances greater than 1 linear mile or 2 acres require cooperation between the BLM, project proponents, and other appropriate agencies to develop and consider implementation of appropriate regional mitigation to avoid or minimize habitat and population-level effects to greater sage-grouse.

Under these policies, offsite and onsite mitigation can include in-kind or out-of-kind mitigation. In-kind is defined as the replacement or substitution of resources that are of the same type and kind of those being impacted. Out-of-kind is defined as replacement or substitutions of resources that while related are of equal or greater overall value to public lands. In addition, IM 2013-142 also identifies that the BLM may accept monetary contributions, how they may be used, and that mitigation may be conducted on non-federal lands.

In compliance with IM 2012-43, IM 2013-142, IM 2012-044, Order 3330, the Range-Wide Mitigation Framework, and the Framework for Impacts Analysis, PacifiCorp has completed an HEA to determine the amount of compensatory mitigation necessary to offset potential direct impacts and select indirect impacts to greater sage-grouse resulting from the construction, operation, and maintenance of the Project in all known sage-grouse habitat in Wyoming, Colorado, and Utah that are intersected by the agency preferred alternative selected by the BLM through the NEPA process. This HEA is one part of a larger mitigation plan being prepared by PacifiCorp. The mitigation plan will use the HEA to quantify the compensatory mitigation obligation for direct impacts and select indirect impacts. The mitigation plan will additionally include compensatory mitigation for indirect impacts not modeled in the HEA.

The HEA produced an estimate of the permanent and interim potential loss of greater sage-grouse habitat services as a result of vegetation loss, noise, and human presence anticipated with Project construction and operation. The HEA also modeled mitigation measures that may be implemented to offset the potential lost habitat services from modeled project effects. Refer to Pacificorp's sage-grouse mitigation plan (in development) for specifics on mitigation projects and to review PacifiCorp's approach to mitigating project effects characterized by the Framework for Impacts Analysis that could not be modeled in the HEA.

The following sections provide overviews of HEA, the HEA process for the Project, the methods used for the HEA, habitat service losses estimated by the HEA, and potential types of mitigation measures that could be used to compensate for habitat loss. Detailed methods excerpt from the Project's HEA Plan are provided in the appendices to this report.

2.0 Overview of Habitat Equivalency Analysis

A HEA is a science-based, peer-reviewed method of quantifying interim and permanent habitat injuries, measured as a loss of habitat services from pre-disturbance conditions, and scaling compensatory habitat requirements to those injuries (King 1997; Dunford et al. 2004; Allen et al. 2005; Kohler and Dodge 2006; National Oceanic and Atmospheric Administration [NOAA] 2006, 2009). Habitat services include those ecosystem features (i.e., physical site-specific characteristics of an ecosystem) and ecosystem functions (i.e., biophysical processes that occur within an ecosystem) that support wildlife and human populations (King 1997).

Habitat services are generally quantified using a metric that represents the functionality or quality of habitat (i.e., the ability of that habitat to provide wildlife "services" such as nest sites, forage, cover from predators, etc.). When wildlife habitat is the primary service of interest, areas with the highest habitat service levels are those areas with highest habitat quality. Interim (or short-term) habitat injuries are those services that are absent during certain phases of the project that would have been available if that disturbance had not occurred (e.g., temporary vegetation losses, temporary soil partitioning, temporary displacement of wildlife populations). Permanent habitat injuries are those habitat injuries remaining after project completion and interim reclamation and recovery are complete (e.g., permanent vegetation loss, permanent loss of wildlife or fisheries populations, irrecoverable impacts to soils or water as a result of contamination).

HEA uses a service-to-service approach to scaling. HEA does not assume a one-to-one trade-off in resources (e.g., number of acres). Rather, HEA balances the number of services lost with those that are gained as a result of conservation activities (NOAA 2006). For example, 1 acre of land with a diverse vegetative structure and abundant tree canopy can support higher numbers of nesting songbirds (an example of a habitat service of interest) than 1 acre of land with few trees and little vegetative diversity. The two land parcels, although equal in size, provide unequal habitat services.

2.1 What Does Habitat Equivalency Analysis Do?

HEA is an economics model that:

- quantifies current habitat services provided in a project area or landscape (commonly referred to as the baseline habitat service level);
- quantifies the interim and permanent injuries to the baseline habitat service level; and
- determines appropriately scaled restoration and conservation activities to offset habitat services lost as a result of project impacts.

2.1.1 Benefits of Habitat Equivalency Analysis

The following are benefits of HEA.

- High credibility – the approach has been evaluated and documented in scientific peer-reviewed literature and has held up in numerous court cases.
- Analyses are quantitative rather than qualitative in nature.
- Equations are straightforward, but have enough input variables to allow flexibility in project design.
- Provides a replicable method for negotiation of mitigation ratios, acceptable compensatory restoration, and/or fines.
- Valuable planning tool; can be used to evaluate the cost of multiple compensatory mitigation measures.
- Applicable to any ecosystem type where an appropriate habitat services metric can be defined.
- Currently the most commonly used method by natural resource trustees to assess damages to ecosystems.
- Used by federal regulatory agencies, such as the USFWS, NOAA, BLM, Environmental Protection Agency, Department of Interior, and U.S. Army Corps of Engineers.

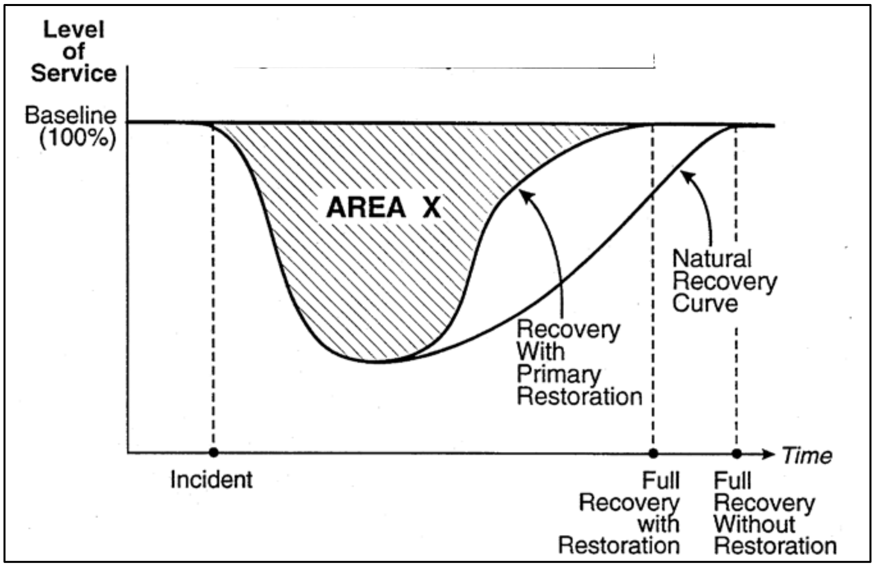
2.1.2 When Habitat Equivalency Analysis Should Be Used

Based on Chapman (2004), HEA is an appropriate tool for scaling mitigation when:

- habitat services can be defined or modeled;
- quantification of project impacts is possible;
- replacement of services lost is feasible; and
- conservation methods are sufficiently known.

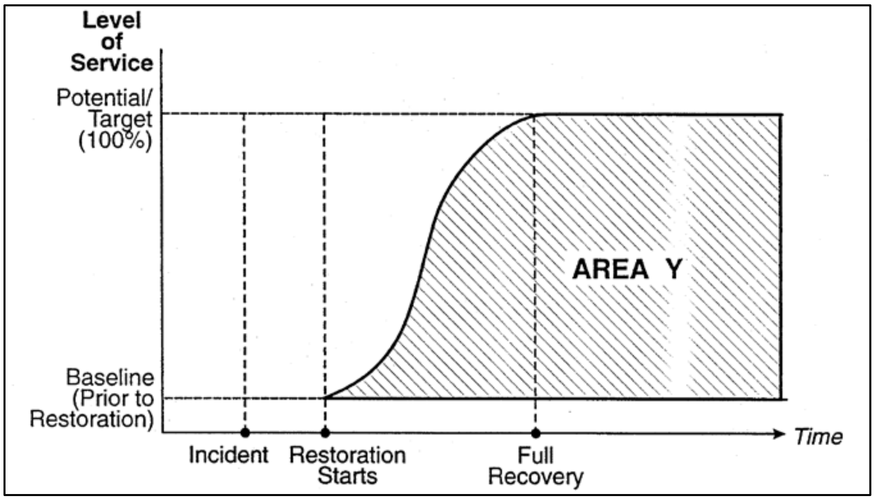
2.2 Compensation Components

Compensation for impacts includes two components: 1) recovery of the injured area (primary restoration) (Figure 2); and 2) compensation for the interim loss of habitat services occurring prior to full recovery (compensatory restoration) (Figure 3).



Area X represents the services lost at an injury site with Primary Restoration expressed as percent of baseline (King 1997).

Figure 2. Changes in habitat service level compared to the baseline service level during construction and restoration.



Area Y represents the services gained at the compensatory restoration site expressed as percent of potential/target level less baseline (pre-restoration) percent (King 1997).

Figure 3. Changes in habitat service level with compensatory restoration.

HEA quantifies the habitat services lost during the lifetime of a project compared to baseline (Area X in Figure 2) and scales the compensatory project (mitigation project) so that it provides services that are equal to that loss (Area Y in Figure 3). Baseline refers to the condition of the resources and quantity of habitat services that would have existed had the disturbance not occurred. The quantity of services lost (Area X) depends on the extent of the injury and the time required for restoration; actions taken to accelerate the rate of primary restoration would decrease the interim loss of habitat services, requiring less compensatory restoration. In some cases, full restoration of the lost services may not be feasible, in which case the area required for compensation (Area Y) would be larger. Compensatory restoration may occur off-site (e.g., the purchase of additional habitat), or on-site through habitat improvements that increase habitat services above baseline.

2.3 Measuring Habitat Services (Ecological Economics)

Quantifying the services provided by an ecosystem is a complex task. This complexity can be reduced through the use of an attribute, or metric, that provides a measure of the services of interest. The metric must be able to capture the relative differences in the quality and quantity of services being provided before and after restoration and between primary and compensatory sites (NOAA 2009).

Measurements of habitat services over the lifetime and area of a project are used in the HEA. These measurements have three components: land area, service level, and time. The relative service level can be quantified using a metric that measures or scores one or more key habitat elements for a species or wildlife community of interest (e.g., vegetation stem density, vegetation type, nest density, percentage of canopy cover, proximity to critical habitat, etc.). Habitat services are commonly expressed in service-acres (1 year) or service-acre-years (multiple years).

3.0 Overview of the Habitat Equivalency Analysis Process for the Project

Completion of the HEA process for the Project agency preferred alternative required close coordination with the BLM, other appropriate agencies, and stakeholders (the HEA Technical Advisory Team, hereafter). Such coordination ensures that the best available scientific data were used, the habitat service metric was appropriate for resources in the Project area, the results of the HEA are understood, and the compensation offsets the interim and permanent loss of habitat services modeled. The following steps have been completed as part of the development of the HEA for the Project.

1. **Establishing baseline habitat services prior to disturbance.**

   PacifiCorp worked closely with the HEA Technical Advisory Team to finalize a habitat services metric that quantified the baseline greater sage-grouse habitat services available prior to Project construction. Appendix A provides information related to the development of the habitat services metric that served as the basis for quantifying baseline habitat services and determining Project impacts and appropriate mitigation. Appendix B presents information related to how this metric was applied to establish baseline habitat services for the Project area. Development of the baseline habitat service metric presented in Appendix A considered the best available scientific information regarding greater sage-grouse habitat and average response to disturbance. The same metric was applied to all states, which assumes that high value habitat looks the same and has the same value to sage-grouse along the entire length of the project. Insufficient baseline grouse population data were available to model more nuanced effects to the populations affected.

2. **Quantifying the permanent and interim losses to the baseline service level that result from the Project disturbance.**

   Permanent and interim losses of habitat services anticipated with the construction and operation of the Project were quantified as described in Appendix C. These are the habitat losses (measured in discounted service-acre-years) that remain after accounting for reclamation efforts and vegetation recovery in the ROW over the life of the Project, and they will provide the basis for assessing the adequacy of mitigation proffered by PacifiCorp for Gateway South.

3. **Identifying appropriate mitigation measures that may be used to compensate for lost services.**

   PacifiCorp worked with the HEA Technical Advisory Team to identify mitigation measures that may be used to compensate for the permanent and interim losses of habitat services. All mitigation measures would be subject to appropriate land management agency or landowner approval, permits, and planning. Appendix D describes the methods that were used to quantify habitat service gains resulting from mitigation measures.

   In the HEA process, the benefits of mitigation measures must be quantifiable using the habitat services metric. Additional mitigation measures with benefits that cannot be quantified in the HEA (e.g., brood-rearing habitat improvement and understory improvement measures) will be considered separately in PacifiCorp's Mitigation Plan for Gateway South and their compensatory value determined in coordination with the lead agencies and other stakeholders.

4. **Quantifying the amount of mitigation necessary to compensate for the losses to baseline services that remain after the Project implementation.**

   The average habitat service gain and cost per service returned were quantified for each of the final mitigation measures identified by PacifiCorp, lead agencies, and involved stakeholders. The resulting values will be balanced with the services lost to determine the compensatory mitigation appropriate to offset the permanent and interim loss of greater sage-grouse habitat services resulting from development of the Project. This balancing will occur in PacifiCorp's mitigation plan for Gateway West with a proposed mitigation project mixture. PacifiCorp's mitigation plan for Gateway South that documents the scaled compensatory mitigation will be provided to BLM as a voluntary applicant-committed mitigation measure for greater sage-grouse habitat.

4.0 USFWS Conservation Framework for Greater Sage-grouse

In February 2013, the USFWS issued a Conservation Objectives Report (COR) (USFWS 2013) that details the finding of a Conservation Objectives Team (COT) that was convened and asked to develop and recommend the degree and types of threats that would need to be reduced or eliminated in order to conserve the sage-grouse from being in danger of extinction and to prevent the likeliness of the sage-grouse becoming in danger of extinction in the foreseeable future. Part of the recommendation by in the COR was to achieve the objectives set forth in the Western Association of Fish and Wildlife Agencies' (WAFWA) Greater Sage-grouse Comprehensive Conservation Strategy (Stiver et al. 2006), the main goal of this being to reverse the declining population trends and obtain either a neutral or increasing population trend.

In order to meet the objectives of the COR, conservation frameworks were developed to achieve the long-term conservation of the sage-grouse. This document describes how the long-term conservation of sage-grouse and their habitats—sagebrush shrub and native perennial grass and forb communities—should be achieved by maintaining viable, connected, and well-distributed populations and habitats across their habitat range, through threat elimination, conservation of key habitats, and restoration activities. The conservation framework of the COR consists of the following.

1. Defining general conservation goals.
2. Developing specific conservation objectives and measures.
    a. Identifying priority areas for conservation.
    b. Identifying sage-grouse population threats.

Three parameters—population representation, habitat representation, and redundancy—were used as guiding concepts in developing the conservation goal, priority areas for conservation, conservation objectives, and measures. This conservation framework was also used in the development of the HEA framework, which is discussed in Section 5.

4.1 General Conservation Objectives

The following section lists the general conservation objectives that were developed by the COT.

1. **Stop population declines and habitat loss.**

    Eliminating activities known to negatively impact sage-grouse and their habitats or redesigning these activities to achieve the same goal and management must continue to effectively conserve all current priority areas for conservation (PACs).

2. **Implement targeted habitat management and restoration for populations that are essential to maintain range-wide redundancy and representation.**

    Use pro-active management of non-anthropogenic threats (e.g., strategic placement of firefighting resources) and restoration efforts. The effectiveness of restoration activities must be demonstrated prior to receiving any credit for mitigation losses. Effective habitat conservation and, as appropriate, restoration activities, should be implemented immediately. Development and implementation of monitoring plans for these activities is an essential component of these efforts. In addition, some areas are not included as PACs but may still have great potential for providing important habitat if active habitat management is implemented. Successful habitat management efforts could increase connectivity between PACs and will enhance management flexibility in conserving the species.

3. **Develop and implement state and federal sage-grouse conservation strategies and associated incentive-based conservation actions and regulatory mechanisms.**

    Stakeholders should work together to develop a plan, including any necessary regulatory or legal tools (or use an existing plan, if appropriate) that includes clear mechanisms for addressing the threats to sage-grouse within PACs. Successful implementation of regulatory and incentive-based mechanisms to conserve sage-grouse requires that all stakeholders participate in conservation, regardless of the size, type, ownership, or location of the threat impact. Conservation strategies should consider criteria identified in the USFWS/NOAA Fisheries *Policy for Evaluation of Conservation Efforts When Making Listing Decisions*. Regulatory mechanisms must be completed and implemented and incentive-based conservation actions negotiated as quickly as possible… All regulatory and incentive-based mechanisms should have a monitoring plan that will provide scientifically defensible data regarding their effectiveness.

4. **Develop and implement proactive, voluntary conservation actions.**

   Proactive, incentive-based, voluntary conservation actions (e.g., Candidate Conservation Agreements with Assurances, Natural Resources Conservation Service programs) should be developed and/or implemented by interested stakeholders and closely coordinated across the range of the species to ensure they are complimentary and address sage-grouse conservation needs and threats. These efforts need to receive full funding.

5. **Develop and implement monitoring plans to track the success of state and federal conservation strategies and voluntary conservation actions.**

   A robust range-wide monitoring program must be developed and implemented for sage-grouse conservation plans. Adequate funding must be secured for development, implementation, and enforcement of regulatory and incentive-based mechanisms, other conservation strategies, and monitoring programs. A monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective. New or adapted management actions must be developed and implemented if the monitoring determines that current management actions are ineffective.

6. **Prioritize, fund, and implement research to address existing uncertainties.**

   Increased funding and support for key research projects that will address uncertainties associated with sage-grouse and sagebrush habitat management is essential. Effective amelioration of threats can only be accomplished if the mechanisms by which the impacts of the threats that are imposed are understood.

Specific conservation objectives and measures from the COR are provided in Appendix F.

4.2 Consistency of the HEA with COR Conservation Objectives

PacifiCorp worked with lead agencies and involved stakeholders to identify mitigation measures that further the objectives defined in the COR for modeling in this HEA. Descriptions of how the modeled mitigation measures fit into the COR objectives are provided in Section 5.3. Development of the HEA itself is also consistent with the recommendation by the COR that habitat function lost from the placement of infrastructure should be replaced. The objective of the HEA is to measure the habitat services (habitat function) lost so that the mitigation plan can identify projects to replace them. The relative value of the project impacts and benefits of mitigation projects were assumed to be the same across all states affected by the Project in the HEA.

5.0 Overview of the Habitat Equivalency Analysis Methods Used

The following sections provide an overview of methods used to develop the HEA models that were applied to assess the loss of greater sage-grouse habitat services associated with the Project development and the benefits of various conservation project types that may be proposed for mitigation.

5.1 Development of Habitat Service Metric

To quantify the habitat services (e.g., greater sage-grouse habitat functionality) provided by an ecosystem, a habitat service metric was developed that scores key habitat elements for the species. Scoring habitat services is a critical step in the HEA process because it provides a way to quantitatively measure the quality of specific habitat functions in a specific area. The habitat metrics used in the HEA had to be able to capture the relative differences in the quantity of services provided before and after construction and conservation-focused activities. Habitat services often have three components—land area, service level, and time—and are commonly expressed in service-acres (1 year) or service-acre-years (service-acres summed over multiple years).

The greater sage-grouse habitat services metric for the Project was developed collaboratively by the HEA Technical Advisory Team. The focus of the metric was to capture changes in greater sage-grouse habitat services over time with vegetation removal and recovery. Using this approach, lost habitat services (decreases in habitat quality) must be replaced with like services. The HEA does not assume a one-to-one trade-off in resources (e.g., number of acres of greater sage-grouse habitat affected), but instead determines compensation based on the habitat services those acres provide (e.g., development in high-quality greater sage-grouse habitat would have higher compensation levels than development in lower-quality habitat that provides fewer services).

The habitat service metric developed for the Project included variables identified by the peer-reviewed literature as having influence on the quality of greater sage-grouse habitat, including dominant vegetative components and anthropogenic influences (Table 1). The variables included were limited to those for which reliable and consistent data were available across the Project area. For each of the variables, a habitat service score ranging from 0 to 3 (zero to high services) was assigned for categories like those defined in the *Sage-grouse Habitat Assessment Framework* multi-scale habitat assessment tool (Stiver et al. 2010). Categorical variables were more appropriate than continuous variables due to the resolution of the remotely sensed vegetation data available for the length of the Project. The break points between service scores for a variable (e.g., the measurement on the border between scores 1 and 2 for a variable) were primarily based on information contained in the literature regarding greater sage-grouse habitat use and selection. When literature did not allow for direct quantification of the HEA scores, professional judgments of the HEA Technical Advisory Team informed by the available peer-reviewed literature were used. When measurements for a particular variable matched conditions described as being optimal in the literature, that variable was given a service score of 3.

The metric for greater sage-grouse habitat services used in this HEA was an additive model (Table 1). Each cell in the analysis area is scored separately by summing the scores of Variables 01 through 08 and all variables are weighted evenly. Once summed, a score adjustment is made for the presence of fences posing a high collision risk to greater sage-grouse during the lekking season. The score was adjusted by multiplying it by a factor that reduces the overall summed score where high risk fences are present. For example, if a cell has a summed score of 20, but occurs where a fence has a predicted sage-grouse collision rate of 0.3 bird, the summed score of 20 would be multiplied by 0.75 (the assigned adjustment factor for a collision rate of 0.3 bird) producing a final additive score for that cell of 15. Each of the eight variables and the fence collision score adjustment are described in detail in Appendix A.

There are several types of lands that are excluded from the HEA, meaning that no matter the additive score in that cell, if it is part of an excluded land then it receives a score of zero overall. The excluded land are land cover types that are typically avoided by the sage-grouse. These avoided lands include all forest types, urban areas, open water, some introduced vegetation types, roadways, well pads, mine footprints, areas <100 meters (m) from roadways with >6,000 annual average daily traffic (AADT) and <25 m of paved roads with <6,000 AADT, and heavily traveled gravel roads (multiple sources per USFWS listing decision in *Federal Register*; Johnson et al. 2011). The specific national Gap Analysis Program (GAP) vegetation classifications that were included in these avoided land cover types (forests, urban areas, etc.) are listed in Appendix E.

The HEA metric was used to score habitat service level for all areas on and within 2 kilometers (km) of the Project centerline (Assessment Area). None of the habitat service losses modeled (vegetation loss, noise, and human presence) extended outside the Assessment Area. Finally, the Assessment Area was clipped to the BLM's greater sage-grouse PGH. The PGH layer used in the analysis encompassed the BLM's greater sage-grouse PPH, so the Assessment Area only included those areas that are recognized as known sage-grouse habitats.

Table 1. Anthropogenic and Habitat Variables Used as a Metric of Greater Sage-grouse Habitat Services

Variable Number	Variables Description	HEA Score Criteria				Primary Citations^
		3	2	1	0	
VAR01	Distance to high-traffic (>6,000 AADT) road, such as an interstate, federal, or state highway (meters)	>1,000	650–1,000	100–650	<100*	Craighead Beringia South (2008); Johnson et al. (2011); Pruett et al. (2009)
VAR02	Distance to low-traffic (<6,000 AADT) paved roads, heavily travelled gravel roads, well pads, mine footprints, transmission substations (meters)	>200	50–200	25–50	<25*	Connelly et al. (2004); Craighead Beringia South (2008); Johnson et al. (2011); Pruett et al. (2009)
VAR03	Percent slope	<10	10–30	30–40	>40	Beck (1977); Lincoln County Sage Grouse Technical Review Team (2004)
VAR04	Distance to occupied lek† (kilometers)	0–6.4	6.4–8.5	>8.5	N/A	Cagney et al. (2009); Connelly et al. (2000); Connelly et al. (2011); Holloran and Anderson (2005)
VAR05	Sagebrush abundance index (% of vegetation that is sagebrush within a 1-square-kilometer moving window)	50–95	30–50 or >95	10–30	0–10	Carpenter et al. (2010); Walker et al. (2007); Aldridge and Boyce (2007); Aldridge et al. (2008); Wisdom et al. (2011)
VAR06	Percent sagebrush canopy cover	15–35	5–15 or >35	1–5	<1	Cagney et al. (2009); Connelly et al. (2000); Stiver et al. (2010)
VAR07	Sagebrush canopy height (centimeters)	30–80	20 to <30 or >80	5–20	<5	Crawford et al. (2004); Connelly et al. (2000); Stiver et al. (2010)
VAR08	Distance of habitat to sage or shrub dominant (meters)	<90	90–275	275–1,000	>1,000	BLM et al. (2000); Connelly et al. (2000); Lincoln County Sage Grouse Technical Review Team (2004)

* Lands less than 100 meters from a high traffic road and less than 25 meters from a low traffic paved road or high traffic gravel road were given a total metric score of 0 (provides no habitat services), not just a score of 0 for these individual variables. This is referred to as the road “width” in the direct impacts, although it is larger than the actual physical width of the road.

^ Greater sage-grouse habitat suitability publications vary in their descriptions of the baseline environmental conditions affecting a particular study site. Even studies within a single state may describe different suitable habitat conditions depending on elevation, precipitation zone, and other geographic or climatic factors affecting each study site. The habitat metric relied on generalizations presented in BLM et al. (2000), Cagney et al. (2009), Connelly et al. (2011), Connelly et al. (2000), Stiver et al. (2010), and other summary publications. Specific citations are given to support these generalizations when applicable. The same metric of habitat services was applied to the entire Project area.

† Leks were classified as occupied if their 10-year attendance average was greater than 0.

AADT = annual average daily traffic

5.2 Quantification of Habitat Service Losses

The following sections describe the losses of habitat services that would likely occur as a result of the Project construction and operation. These changes in the habitat service level were simulated in a geographic information systems (GIS) platform to produce data inputs for the HEA.

The HEA model calculates the present value of future changes to the baseline habitat service level with time caused by losses of habitat services with Project development and gains of habitat services with mitigation projects. Economists call this process *discounting* and it is a standard part of the HEA model. Discounting converts services being provided in different time periods into current time period equivalents (Allen et al. 2005). Discounting results in a gradual increase in the service-acres provided by injured habitats over time (the habitat service loss is discounted), and the same rate of decrease in service-acres gained by habitat conservation over time (the habitat service gain is discounted). Consequently, credit for mitigation in the form of habitat conservation is greater when implemented early in the lifetime of the Project than when implemented late in the lifetime of the Project. This encourages early mitigation to offset habitat service losses to ensure that long-term adverse effects to the resource are minimal.

Ideally, the baseline habitat service level would account for all habitat service losses associated with existing environmental disturbances. This was done to the extent possible with the existing data for the Assessment Area. In some cases, existing habitat disturbances were not mapped in the baseline service level because they were not detected by the chosen habitat services metric or because the data were unavailable for use in the baseline analysis. Omission of these disturbances is a conservative approach to the analysis of the Project-related habitat service losses. When baseline disturbances are omitted, the analysis assumes that the habitats affected by the Project are of higher-quality than they actually are and thus require a greater amount of mitigation to offset the Project-related habitat service losses.

The habitat services provided by the Assessment Area were calculated at Project milestones that reflected varying levels of disturbance. The Project milestones modeled with GIS data for the HEA are listed below. Snapshots of the changing habitat services over time were modeled using GIS-based tools for each of the milestones identified above for incorporation into the HEA. The HEA calculated the total interim and permanent habitat injuries that can be quantified by the metrics used. As there may be additional Project impacts that were not modeled, such as unknown or unquantified indirect effects, the total anticipated habitat injury may be greater by an unknown amount. The potential for habitat injuries not quantified by the HEA is addressed separately by the mitigation plan. Specifics of the GIS and HEA methods are provided in Appendix C.

The HEA Technical Advisory Team decided that habitat services would be scored using the same habitat service metric in all states. Likewise, the habitat service losses modeled for specific Project impact types were the same in all states. The value of the habitat services present at baseline and the value of the habitat services lost due to the Project does not reflect the number of birds using that habitat (except measured as proximity to a lek). In some cases, the habitat may be overvalued or undervalued with regard to the population's relative management value as a result.

The habitat service losses were calculated based on the project layout and project construction schedule in each State. The footprint of the Project was provided electronically by PacifiCorp (dated 10/13/2014). The footprint files specified the anticipated locations of and direct disturbance associated with new and existing access roads, transmission towers, pulling/tensioning areas, two series compensation stations, and helicopter yards. These locations are approximate and have not yet been sited to take advantage of existing roads. Thus, all access roads are assumed by this analysis to produce a new disturbance, which should produce an overestimate of the actual impact. Again, this is consistent with a conservative approach to mitigation planning.

The planned Aeolus substation is being mitigated by the Gateway West Transmission Line Mitigation Plan and the Clover substation is already operational, so these substations are not modeled as new impacts but are characterized as baseline habitat disturbances.

The construction schedule provided by PacifiCorp (dated 9/15/2014) illustrates the Project being divided into 7 spreads, with construction staggered among spreads over a period of 146 weeks. Construction within a single spread is complete in 83-150 weeks (1.6 to 2.9 years). Construction is planned to take longer in the Utah spreads (mean 2.5 years, range 2.1 to 2.9 years) than in Wyoming (mean 1.7 years, range 1.6 to 1.9 years) or Colorado (mean 2.0 years, range 1.8 to 2.1). Accordingly, 3 years of construction was modeled for Utah, and 2 years of construction was modeled for Wyoming and Colorado. Direct and indirect disturbances modeled are described by milestone and project year in Tables 2 and 3, respectively.

Table 2. Direct Disturbance Levels Modeled by Project Year and Disturbance Type

Project Milestones	Project Year Applied in Wyoming and Colorado	Project Year Applied in Utah	Percent Baseline Services Present at Each Milestone by Direct Disturbance Type		
			Series Compensation Stations	Transmission Towers* (360 feet^2 of the pad[†])	New and Existing Access Roads, Helicopter Pads, Transmission Towers (remainder of pad), Pulling/Tensioning Site, and Elsewhere[‡]
Baseline	0	0	100%	100%	100%
Construction	1, 2	1, 2, 3	0%	0%	0%
Restoration	3	4	0%	0%	0%
Recovery 1	4	5	0%	0%	100% of agricultural and wetland 20% of grassland and riparian 5% of shrub 1% of sagebrush
Recovery 2	8	9	0%	0%	100% of agricultural and wetland 100% of grassland and riparian 25% of shrub 5% of sagebrush
Recovery 3	23	24	0%	0%	100% of agricultural and wetland 100% of grassland and riparian 100% of shrub 20% of sagebrush
Recovery 4	103	104	0%	0%	100% of agricultural and wetland 100% of grassland and riparian 100% of shrub 100% of sagebrush

* The self-supporting steel lattice tower is assumed for this analysis.

[†] Tower pad in this table refers to the permanent tower footprint.

[‡] Elsewhere refers to construction roads that were reduced to two-track roads, or any areas where vegetation was cleared for Project construction that were subsequently revegetated during restoration (e.g., staging areas).

Table 3. Indirect Disturbance Levels Modeled by Project Year and Disturbance Type

Project Milestones	Project Year Applied in Wyoming and Colorado	Project Year Applied in Utah	Indirect Disturbance Buffers* Applied by Disturbance Type		
			Series Compensation Stations	**Transmission Towers* (360 feet^2 of the pad)**	**New and Existing Access Roads, Helicopter Pads, Transmission Towers (remainder of pad), and Pulling/Tensioning Site**
Baseline	0	0	None	None	None
Construction	1, 2	1, 2, 3	Secondary Road*	Secondary Road	Secondary Road
Restoration	3	4	Secondary Road	None	None
Recovery 1	4	5	Secondary Road	None	None
Recovery 2	8	9	Secondary Road	None	None
Recovery 3	23	24	Secondary Road	None	None
Recovery 4	103	104	Secondary Road	None	None

* “Secondary Road” indicates that the footprint of the disturbance was classified as having the same indirect disturbance as a secondary road in the GIS model (Variable 2 in Table 1) and the scores of the surrounding vegetation decreased as defined by the habitat services metric.

5.2.1 Baseline

The baseline milestone quantifies habitat services available to greater sage-grouse before the proposed project disturbance. The calculation of the baseline is described in Appendix B. Habitat services were scored per the habitat service metric without consideration for state, population size, or the relative management value of the population. Habitat with the same physical attributes received the same score regardless of its location or conservation designation.

The inclusion or exclusion of existing impacts in the baseline habitat model is consistent with the impacts modeled for the Project—it includes direct impacts and some indirect impacts, but not all potential indirect impacts. Some existing disturbances are accounted for (e.g., oil and gas wells, paved roads, urban areas) and others are not (e.g., existing transmission lines, low-traffic gravel roads). Inclusion or exclusion of disturbances in the baseline model is dependent on how that disturbance was characterized in the GAP vegetation layers and scored by the habitat service metric. Exclusion of existing impacts inflates the baseline habitat service value, requiring a greater level of mitigation to offset; it is a more conservative approach than modeling all existing impacts. Figures 4 through 8 show the baseline services for the Gateway South HEA assessment area (i.e., only those areas within BLM PGH areas and within a 2-km buffer of the Project centerline). In these figures, there is a gradient of color from red through yellow to blue. Red represents a high relative habitat quality (high HEA score) and blue represents a low relative habitat quality (low HEA score), with the darker shades depicting the extremes.

5.2.2 Construction

The construction milestone quantifies habitat services available to greater sage-grouse during the construction and the operation of the Bonanza SCS and Powder Wash SCS proposed as part of the Project and the construction of the transmission line and electrode grid. Magnitude of the loss of habitat services during construction is dependent on proximity to the Project and the amount of new surface disturbance.

Direct Disturbance

During the three construction years, direct disturbance was defined as the loss of all habitat services within the entire construction footprint for the segment modeled (see Table 2). All access roads were assumed to have a width of 50 m (the centerline buffered to 25 m per Variable 02 in the metric) and were modeled as secondary roads (Variable 02 in Table 1). The actual surface road widths will be narrower than the modeled road width; this width reflects the area unusable by sage-grouse during construction per the literature (see Appendix A, Section A.1.1). Although the Project will be sited to align with existing roads wherever possible, this siting process had not been completed at the time of the analysis. Access road impacts during construction will be overestimated as a result of this assumption, resulting in a greater mitigation burden. Additionally, the model did not capture seasonal restrictions on the Project construction required by the BLM, which may have resulted in high estimates of service losses in the three construction years.

Indirect Disturbance

In addition to the actual surface disturbance, indirect disturbance buffers were applied to reduce habitat services around the Project footprint during active construction (see Table 3). Within these buffers (>200 m, 50–200 m, 25–50 m, or <25 m), the habitat services were scored by the metric as if they were in the same as Variable 02 to account for the disturbance associated with noise and human presence (Appendix C). The buffers were applied to the centerline of roads or to the perimeter of other disturbance types.

There are potentially additional indirect impacts of unknown magnitude and extent that were not included in the model. These will be addressed separately by PacifiCorp’s mitigation plan for the Project.

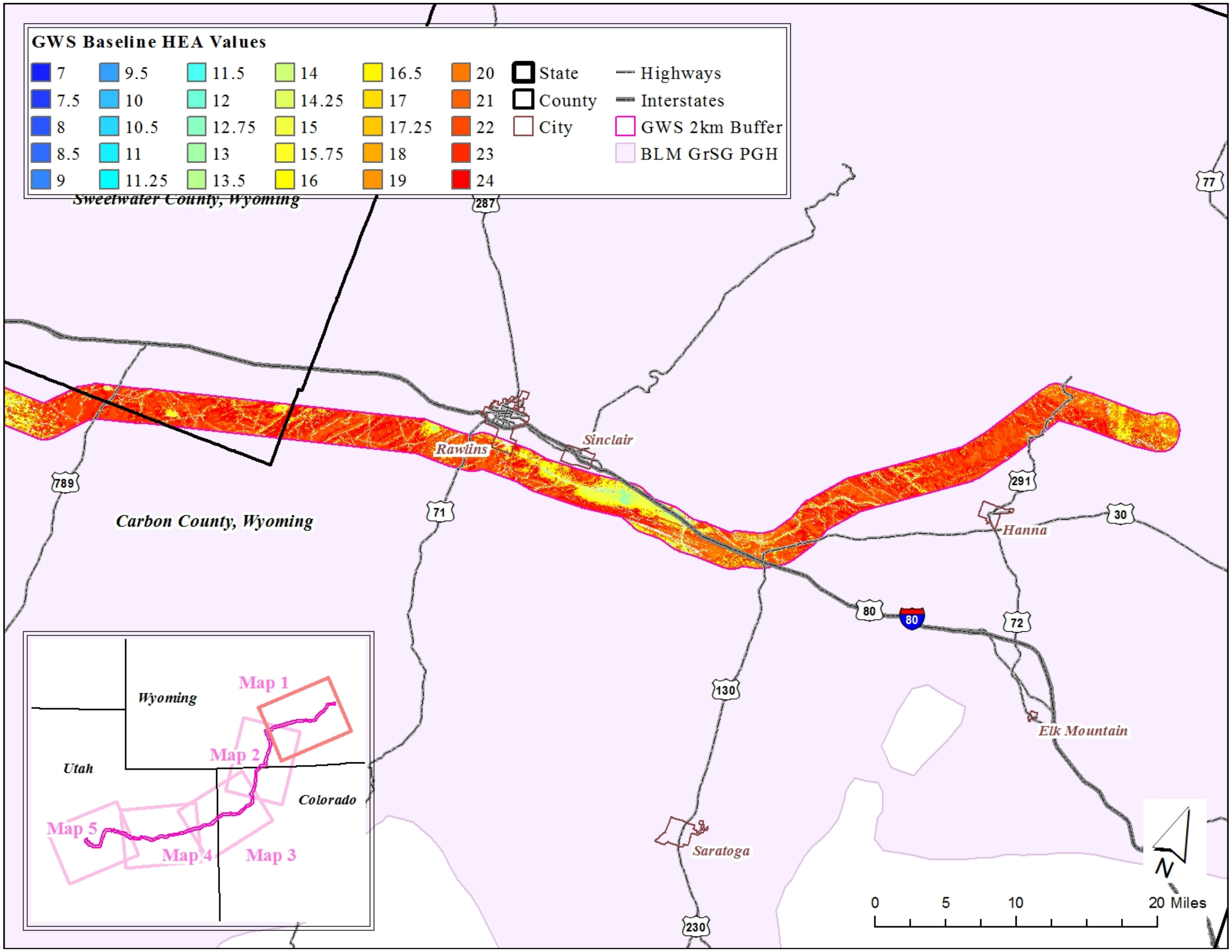


Figure 4. GWS baseline HEA values (map 1 of 5).

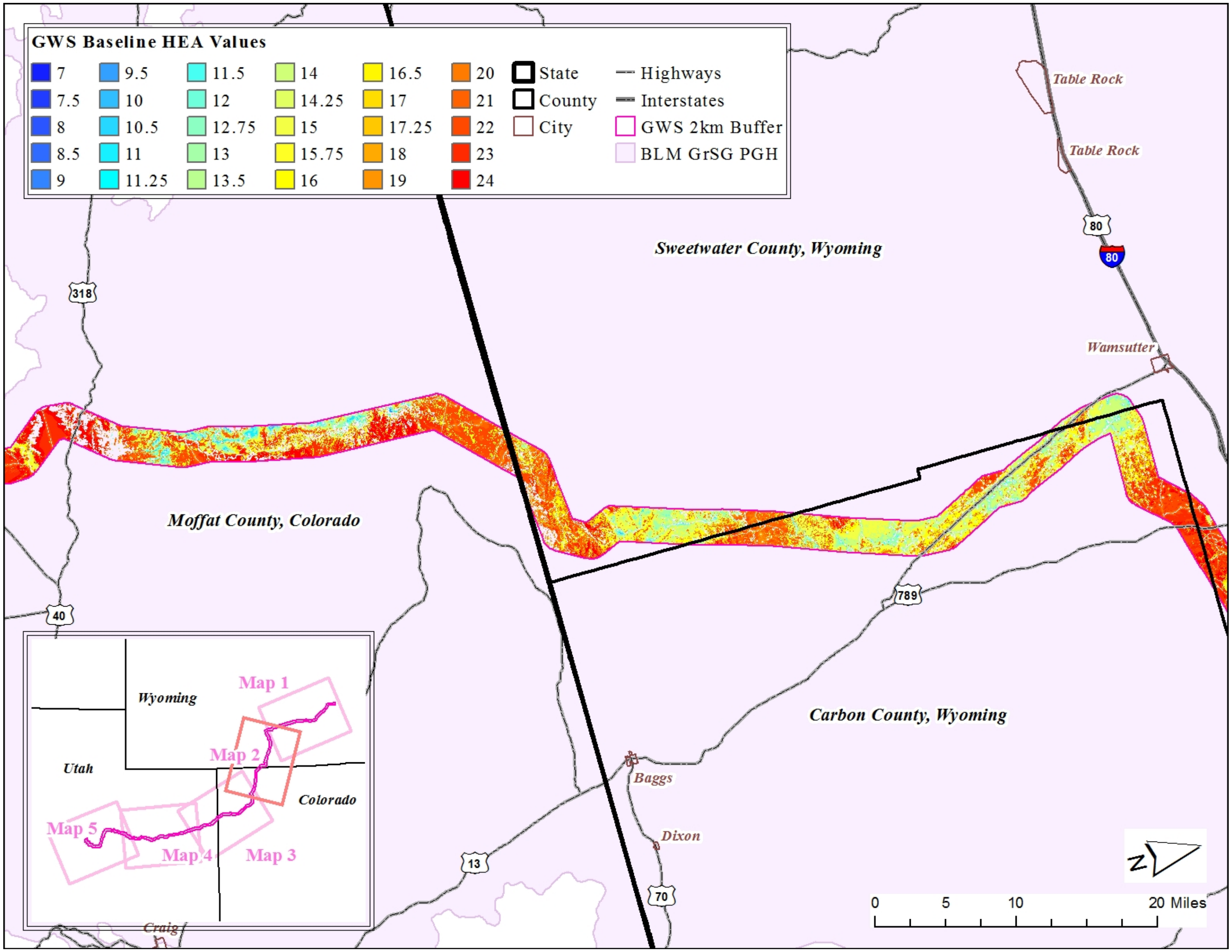


Figure 5. GWS baseline HEA values (map 2 of 5).

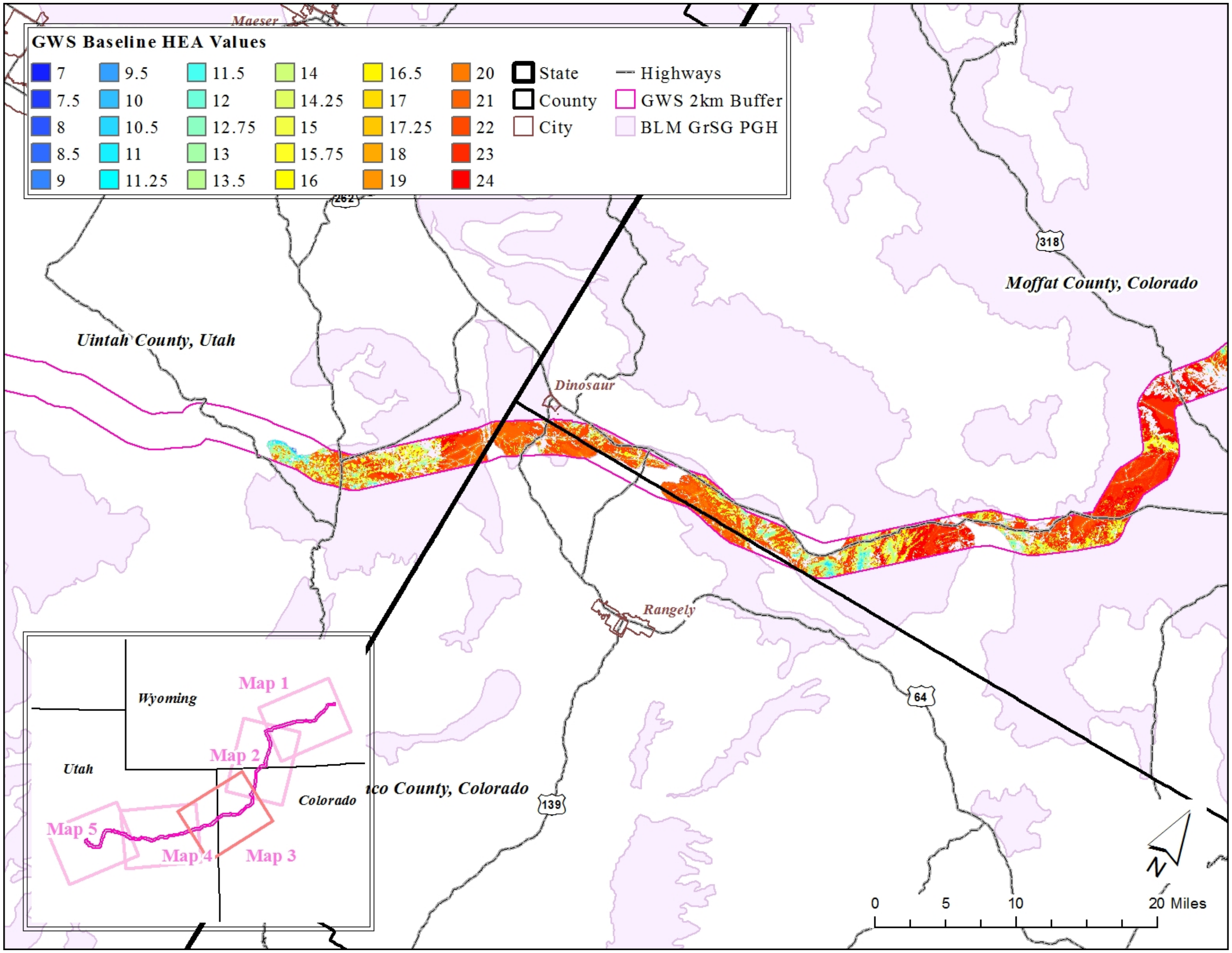


Figure 6. GWS baseline HEA values (map 3 of 5).

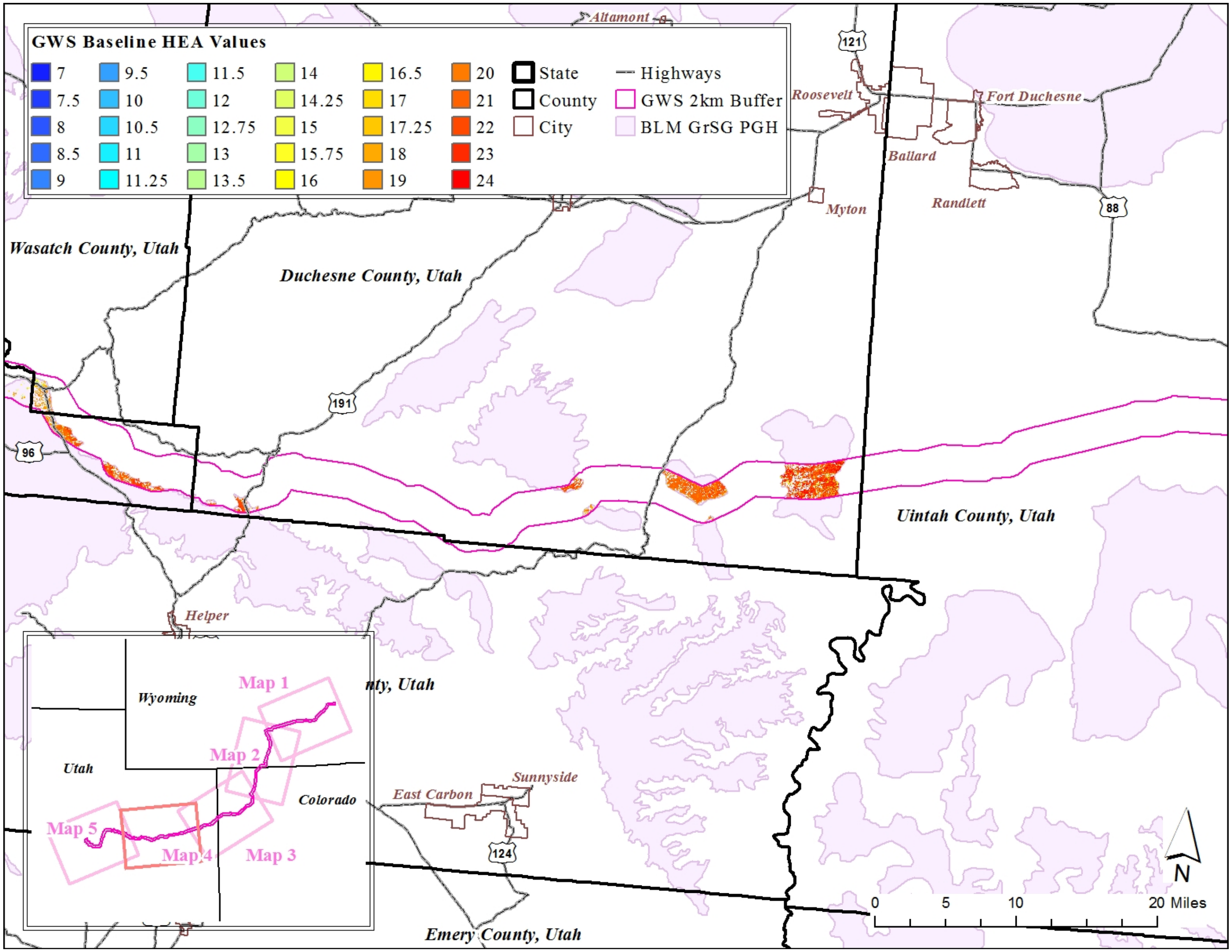


Figure 7. GWS baseline HEA values (map 4 of 5).

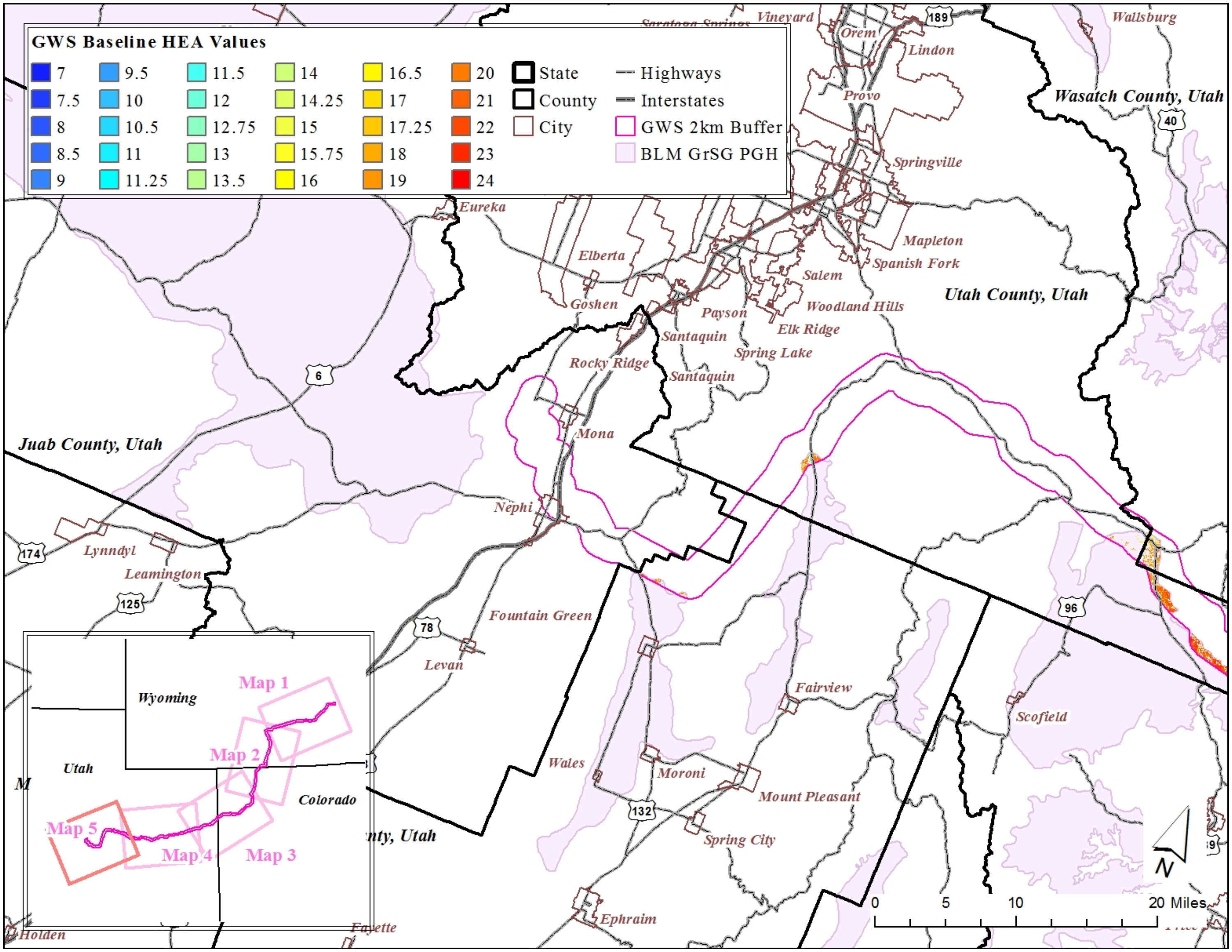


Figure 8. GWS baseline HEA values (map 5 of 5).

5.2.3 Restoration

The restoration milestone quantifies habitat services available to greater sage-grouse after construction is complete with some services returning with the reduction in noise and human presence.

Direct Disturbance

In the restoration year following construction, direct disturbance was still defined as the loss of all habitat services in the construction footprint because the vegetation had not regrown sufficiently to provide habitat. In order to quantify the footprint of the access roads within the project area during restoration, new access roads and previously-existing unpaved low-use roads were assumed to have a width of 20 m, reduced from the 50 m width used to model construction, as they would not be maintained as permanent roads once construction was complete and the adjacent habitats are again usable by sage-grouse. Previously-existing access roads (paved roads or heavily-traveled gravel roads only) were maintained at 50 m in width as they would be maintained as permanent roads post-construction and Variable 02 (Table 1) still applies. The actual road widths will be narrower than the modeled road widths. The width of the permanent roads reflects the surface area of the road as well as the area not usable by sage-grouse (see Appendix A, Section A.1.1). The width of the temporary roads at restoration was chosen so that the impacts would be detectable at the scale modeled, potentially overestimating the impacts of temporary access roads.

Indirect Disturbance

The two series compensation stations are the only indirect impact that remains after construction is complete, other than features modeled as having an indirect impact at baseline (e.g., paved roads). The noise associated with the operation of these stations was characterized as a permanent indirect disturbance in the model and is treated with the same impact buffers as items in Variable 02 and is included as part of Variable 02’s additive score in the HEA. In other words, the area around the series compensation stations receives a score of 0 for the actual footprint and the first 25 m outside the footprint; a score of 1 for the area within 25 to 50 m of the footprint; a score of 2 for the area within 50 to 200 m of the footprint; and a score of 3 for areas outside of the 200-m buffer from the footprint.

Road buffers defined by the habitat service metric (Variable 01 and Variable 02) were applied to the centerline of permanent roads that are paved or heavily traveled. Unpaved access roads were assumed to be to be lightly traveled during restoration and have no modeled indirect impact, regardless of their maintenance into the future.

Little information has been published on greater sage-grouse habitat use near transmission lines. PacifiCorp decided not to model disturbance due to transmission lines because insufficient information was available to characterize and quantify these effects. Potential indirect impacts associated with transmission lines are discussed in detail in the Project’s EIS (BLM 2014).

5.2.4 Recovery

There are four recovery milestones that quantify habitat services available to greater sage-grouse after a vegetation type has recovered to the greatest extent expected after the Project restoration is complete. Habitat services return to baseline conditions in restored areas with the time to recovery being dependent on the vegetation type.

Direct Disturbance

In the recovery years, direct disturbance was defined as the loss of all habitat services in the footprint of permanent facilities (i.e., the series compensation stations and transmission structure pads). Temporary access roads build during construction were assumed to have a width of 20 m and the vegetation was modeled to recover in this footprint over time. Access roads that existed prior to construction were assumed to be 50 m in width as they would be maintained as permanent roads post-construction. The direct disturbance in restored areas was returned at different rates depending on baseline vegetation type. There were four vegetation-based recovery endpoints: 1) agriculture and wetland (1 year after restoration); 2) grassland and riparian (5 years after restoration), 3) shrubs other than sagebrush (20 years after restoration); and 4) sagebrush (100 years after restoration). The assignment of the GAP vegetation types to these four recovery endpoints is described in Appendix E.

Indirect Disturbance

The series compensation stations are the only Project-related indirect impacts that are modeled after construction is complete. There may be additional indirect impacts of unknown magnitude and extent that were not modeled; these indirect impacts will be addressed separately in PacifiCorp's mitigation plan for Gateway South. The noise associated with the operation of the stations was characterized as a permanent indirect disturbance in the model and is treated with the same impact buffers as items in Variable 02 (paved and heavily-used gravel roads) and is included as part of Variable 02's additive score in the HEA. In other words, the area around the series compensation stations receive a score of 0 for the actual footprint and the first 25 m outside the footprint; a score of 1 for the area within 25 to 50 m of the footprint; a score of 2 for the area within 50 to 200 m of the footprint; and a score of 3 for areas outside of the 200-m buffer from the footprint.

Little information has been published on greater sage-grouse habitat use near transmission lines. PacifiCorp decided not to model disturbance due to transmission lines because insufficient information was available to characterize and quantify these effects. Potential indirect impacts associated with transmission lines are discussed in detail in the Project's draft EIS (BLM 2013).

5.3 Quantification of Conservation Benefit to Habitat Services

Habitat conservation measures (Table 4) were selected by the HEA Technical Advisory Team to be modeled in the HEA. These measures have been identified to improve greater sage-grouse habitat services and produce a benefit that could be measured by the habitat service metric used in this HEA. Furthermore, they are consistent with the conservation measures recommended by the COR (USFWS 2013; Appendix F). Specifically, the measures are summarized as follows.

- Fence marking with permanent markers is recommended by the COR to reduce collision-related mortality within 2 km of leks. Fence removal is recommended where fences are unnecessary.
- Sagebrush restoration and improvement projects are appropriate for use in areas designated by the COR as priority areas for conservation. It is recommended that the mitigation plan prioritize these areas for planned habitat conservation projects.
- Juniper/conifer removal using mechanical methods as proposed is consistent with the COR's recommendation for pinyon and/or juniper removal.

- Conservation easements can be used to limit future urban and exurban development in sage-grouse habitats, as recommended by the COR. Again, it is recommended that the mitigation plan prioritize areas designated by the COR as being priority areas for conservation.

The HEA-modeled conservation measures serve as a “toolbox” from which mitigation options may be selected by PacifiCorp for inclusion in a mitigation package. The benefit (in service-acres) for each habitat conservation measure was calculated with GIS technology, using the same habitat service metric as was used to calculate habitat service losses. It should be noted that proposed mitigation may not be limited to the modeled conservation measures. The benefit of some measures could not be measured using the habitat service metric (e.g., improvement of brood rearing habitat, improvement of understory vegetation). If these unmodeled conservation measures are proposed in the mitigation plan, their relative value will determined using a different method.

The same conservative vegetation growth rates that were used to model vegetation recovery in the Project footprint were applied to the habitat conservation measures proposed for mitigation. Conservative growth rates offset the potential for mitigation project failure in the model.

Table 4. Potential Mitigation Projects Modeled in the HEA

Mitigation Project Type	Brief Project Description	Anticipated Benefits	Average Cost of Implementation*,§
Fence removal and marking with flight diverters	Fences would be removed or marked in: 1) sections of fence known to cause greater sage-grouse collisions; 2) within 2 km (1.2 miles) of leks (Stevens et al. 2013) or other high risk areas; 3) in areas with low slope and terrain ruggedness (Stevens 2011); and 4) where segments are bounded by steel t-posts with spans greater than 4 m (Stevens 2011).	• Reduce mortality due to greater sage-grouse collisions • Increase visibility of fences, where diverters are used • Increase contiguous patches of shrub-steppe habitat • Remove localized grazing pressure where fences are removed, thereby increasing local habitat quality (e.g., bunchgrass cover)	$1,485 per mile ($920 per km) for fence removal or initial installation of flight diverters, and $320 per mile per year ($200 per km per year) for maintenance on flight diverters†
Sagebrush restoration and improvement projects	Seeding, planting seedlings, or transplanting containerized sagebrush plants (one plant per 5 m^2)	• Create contiguous patches of shrub-steppe habitat with optimal sagebrush cover and height • Increase availability of high-quality nesting, brood rearing, and winter habitats	$3,975 to $7,320 per acre ($9,820 to $18,090 per hectare) depending on method used ^
Juniper/conifer removal	Mechanical removal (lop and scatter, cut-pile-cover, or mastication) of juniper/confer adjacent to areas with optimal sagebrush cover and height.	• Reverse juniper/conifer encroachment on shrub-steppe habitat to increase contiguous patches of greater sage-grouse habitat • Increase light penetration to support a forb and grass understory	$180 to $2,120 per acre ($445 to $5,240 per hectare) depending on density of vegetation removed ‡
Conservation easements	Removes threat of specific land uses to sensitive wildlife populations.	• Prevent greater sage-grouse habitat destruction or degradation near urban areas and oil and gas development • Reduce future fragmentation of shrub-steppe habitat	$615 per acre ($1,515 per hectare) average purchase price $2,650 per year for each easement for maintenance and monitoring

* Cost of implementation includes a 50% markup for indirect costs, which include contract writing, supervision, clearances, monitoring, inspections, and vehicle costs.

† The cost of maintenance for the lifetime of the Project is included in the HEA model and is reflected in the resulting estimated cost per service-acre-year in Table 6.

‡ The cost of this treatment varies widely depending on the baseline vegetation. The lower end cost includes lop and scatter of Phase I juniper with no understory treatment. The upper end cost includes mastication of Phase III juniper and seeding a bunchgrass understory.

§ Costs were estimated for the Gateway West Transmission Line HEA (BLM 2013) and then adjusted using a 3% inflation rate to bring them up to 2014 dollars. Mitigation funds provided in years after 2014 should be further adjusted for inflation.

^ Cost estimates include seeding a bunchgrass understory, although the benefit of a bunchgrass understory could not be measured by the HEA metric.

km = kilometer m = meter

Three to five hypothetical mitigation project areas were selected to model each conservation measure. The variable scores were manipulated using GIS technology to approximate the change expected with implementation of the measure. The benefit of the measure was the difference in the service score before and after implementation. The mean benefit among the hypothetical mitigation project areas was entered into the HEA, where estimated time until full benefit and discount rate was applied to estimate the discounted service-acre-years gained per mitigation project area. The HEA assumed that the mitigation projects would be funded in the first year of the Project construction.

The cost of the modeled habitat conservation measures was estimated by averaging the known cost of similar conservation projects previously implemented in Idaho and Wyoming—cost estimates from the Gateway West HEA (BLM 2013) were adjusted using a 3% annual inflation rate (equal to the discount rate used in this HEA) to bring the costs up to 2014 dollars. These cost estimates were used to calculate the price per service-acre-year. An HEA scales the mitigation package (i.e., funding to create habitat services) to offset the loss of habitat services over the lifetime of the Project. Appendix D describes the calculation used to quantify the benefit of the mitigation projects compared to baseline.

6.0 Habitat Equivalency Analysis Results

The following sections describe the results of the HEA for habitat service losses over the lifetime of the Project and the results of the HEA for conservation measure benefits. These results are expressed as the discounted service-acre-years (DSAYs) lost or gained, which is the sum of the permanent and temporary losses and gains over the lifetime of the Project with the economic discount rate applied. These results may be used to scale mitigation.

6.1 HEA Habitat Service Loss Results

A separate HEA was run for each state where the Project intersected greater sage-grouse habitat (Colorado, Utah, and Wyoming). The modeled habitat service level at each of the Project milestones was entered into the HEA to calculate the present value of the habitat services lost over the lifetime of the Project. A linear change in service level was assumed between modeled milestones. A summary of the estimated habitat service losses due to the Project’s construction, operation, and maintenance are provided in Table 5 for the full Analysis Area (i.e., 2-km buffer around Project footprint). These are the habitat service totals that need to be offset with mitigation. Service losses varied among states with differences in the buffered Project centerline that intersected greater sage-grouse PGH, differences in baseline habitat quality, and the type of development.

6.2 HEA Conservation Benefit Results

A separate HEA was run for each habitat conservation measure. The habitat service increases modeled using GIS-based tools were entered into the HEA, along with estimates of time between receipt of funding and implementation of the measure, and time between implementation of the measure and full service benefit from the measure. The habitat service gains per unit area treated summed over the lifetime of the Project are provided for each conservation measure in Table 6.

New habitat services (measured in DSAYs) and cost per services gained varied among conservation measures. Conservation easements preserve existing habitat services in areas of potential development and can create new habitat services if existing land practices that are damaging to greater sage-grouse habitat are restricted.

Table 5. Habitat Services Lost in the Analysis Area Over the Lifetime of the Project

State	Permanent Disturbances Modeled	Total Project Length (km)	Total Project Footprint Area (acres)	Assessment Area[†] Length (km)	Assessment Area[†] (acres)	Habitat Services in the Assessment Area at Baseline Condition (DSAYs)[+]	Habitat Services Lost in the Assessment Area (DSAYs)[+]
Colorado	series compensation station transmission tower pads*	146	1,264	139	130,539	70,805,827	1,524,341
Utah	series compensation station transmission tower pads*	304	2,581	36	42,720	19,313,241	564,024
Wyoming	transmission tower pads*	227	1,749	227	224,995	130,751,006	2,405,120
Total	series compensation stations transmission tower pads*	676	5,594	401	398,254	220,870,074	4,493,485

* 360 feet^2

[†] Area in BLM PGH

[+] Summed over the lifetime of the Project

km = kilometer
PGH = preliminary general habitat
DSAY = discounted service-acre-year

Table 6. Mean Present Value Habitat-Service-Acre Gained and Average Cost for Each Habitat Conservation Measure

Conservation Measure	General Method	Mean Habitat Services Gained (DSAYs/unit)	Cost per Services Gained (U.S.$/DSAY) [‡]
Fence removal and marking with flight diverters*	Fence marking within 3 km of leks and in other high risk areas (e.g., winter concentration areas, movement corridors)	3,597 per mile of fence marked	$9.57
	Fence removal within 2 km of leks and in other high risk areas	3,597 per mile of fence removed	$0.41
Sagebrush restoration and improvement projects	Seeding sagebrush	1,751 per acre of disturbance treated	$2.27 [^]
	Transplanting containerized sagebrush stems	4,556 per acre of disturbance treated	$1.61 [^]
	Planting seedlings	1,935 per acre of disturbance treated	$2.30 [^]
Juniper/conifer removal	Lop and scatter Phase I[†] juniper	480 per acre treated	$0.38
	Cut-pile-cover or mastication of Phase II[†] juniper	328 per acre treated	$2.11
	Mastication of Phase III[†] juniper and seeding bunchgrass understory	197 per acre treated	$10.76
Conservation easements	Land purchase (baseline value service credit) applying the annual maintenance and monitoring fee to every 5,000 acres of easement	650 per acre purchased[§]	$1.03

* Although fence removal is more effective at removing the threat of greater sage-grouse collision than fence marking, both measures were modeled as having the same benefit due to a limitation in the model. The cost of fence removal is lower than marking because no ongoing maintenance is required and 100 years of maintenance is assumed for marked fences.

[†] Phases of juniper describe the dominance of this vegetation on the landscape. Phase I is a sagebrush-dominated landscape with scattered juniper, Phase II is a landscape comprising a 50:50 mixture of sagebrush and juniper, and Phase III is a landscape dominated by juniper.

[‡] Cost estimates include permitting and maintenance.

[§] Estimated using the average habitat services value per acre in the Assessment Area, excluding scores of 0, because no specific easements have been proposed.

[^] Cost estimates include the price to seed a bunchgrass understory.

DSAY = discounted service-acre-year
km = kilometer

6.3 Application of Results to a Mitigation Package

PacifiCorp, BLM, and agencies will evaluate the services returned per habitat conservation measure, compare those services gained to the services lost as a result of the Project, and develop an appropriate mitigation plan to compensate for services lost. This analysis is a decision-making support tool for the development of the mitigation plan.

To accomplish a 1:1 trade-off in habitat service-acre-years over the lifetime of the Project per a traditional HEA, habitat conservation measures from Table 6 should be selected to offset 100% of the habitat service losses quantified for each state in Table 5. The recommended approach to this process is outlined in the steps below.

1. Select the habitat conservation measures most appropriate for each segment from Table 6 and define the percent of each measure to be used as mitigation.
2. Calculate the habitat services to be replaced using each habitat conservation measure. The total of the habitat services replaced using each measure should equal the total services lost in Table 5.
3. Calculate the cost to implement each habitat conservation measure in each segment. Multiply the habitat services to be replaced using a measure by the cost per habitat services gained for that measure from Table 6.
4. Sum the costs of the habitat conservation projects separately for each segment. The total would be the mitigation for the modeled habitat service losses in that segment.

7.0 Literature Cited

Aldridge, C.L., and M.S. Boyce. 2007. Linking occurrence and fitness to persistence: Habitat based approach for endangered Greater Sage Grouse. *Ecological Applications* 17(2)508–526.

Aldridge C.L., S.E. Nielsen, H.L. Beyer, M.S. Boyce, J.W. Connelly, S.T. Knick, and M.A. Schroeder. 2008. Range-wide patterns of greater sage-grouse persistence. *Diversity and Distributions* 17:983–994.

Allen, P.D. II, D.J. Chapman, and D. Lane. 2005. Scaling environmental restoration to offset injury using habitat equivalency analysis. In *Economics and Ecological Risk Assessment: Applications to Watershed Management*, edited by R.F. Bruins and M.T. Heberling, pp. 165–184. Boca Raton, Florida: CRC Press.

Beck, T.D.I. 1977. Sage grouse flock characteristics and habitat selection during winter. *Journal of Wildlife Management* 41:18–26.

Bureau of Land Management (BLM). 2014. *Draft Gateway South Transmission Project. Environmental Impact Statement*. BLM Wyoming State Office. February 21, 2014.

Bureau of Land Management (BLM), U.S. Fish and Wildlife Service, U.S. Forest Service, Oregon Department of Fish and Wildlife, and Oregon Division of State Lands. 2000. *Greater Sage-grouse and Sagebrush-steppe Ecosystem: Management Guidelines*.

Cagney, J., E. Bainter, B. Budd, T. Christiansen, V. Herren, M. Holloran, B. Rashford, M. Smith, and J. Williams. 2009. Grazing influence, management and objective development in Wyoming greater sage-grouse habitat with emphasis on nesting and early brood rearing. Unpublished report. Available at: http://gf.state.wy.us/wildlife/wildlife_management/sagegrouse/index.asp. Accessed December 2009.

Carpenter, J., C. Aldridge, and M.S. Boyce. 2010. Sage-grouse habitat selection during winter in Alberta. *Journal of Wildlife Management* 74(8):1806–1814.

Chapman, D.J. 2004. Habitat Equivalency Analysis: Overview and Case Example. Presentation to EPA Science Advisory Board Committee on Valuing the Protection of Ecological Systems and Services.

Connelly, J.W., E.T. Rinkes, and C.E. Braun. 2011. Characteristics of greater sage-grouse habitats. In *Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 69–83. Berkeley: University of California Press.

Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. *Wildlife Society Bulletin* 28:967–985.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Unpublished Report. Cheyenne, Wyoming: Western Association of Fish and Wildlife Agencies.

Craighead Beringia South. 2008. *Monitoring Sage Grouse with GPS Transmitters, Implications for Home Range and Small Scale Analysis: A Preliminary Look*. Jonah Interagency Mitigation and Reclamation Office. 2008 Wildlife Workshop.

Crawford, J.A., R.A. Olson, N.E. West, J.C. Mosely, M.A. Schroeder, T.D. Whitson, R.F. Miller, M.A. Gregg, and C.S. Boyd. 2004. Synthesis paper: ecology and management of sage-grouse and sage-grouse habitat. *Journal of Range Management* 57:2–19.

Dunford, R.W., T.C. Ginn, and W.H. Desvousges. 2004. The use of habitat equivalency analysis in natural resource damage assessments. *Ecological Economics* 48(2004):49–70.

Holloran, M.T., and S.H. Anderson. 2005. Spatial distribution of greater sage-grouse nests in relatively contiguous sagebrush habitats. *The Condor* 107:742–752.

Johnson, D.H., M.J. Holloran, J.W. Connely, S.E. Hanser, C.L. Amundson, and S.T. Knick. 2011. Influences of environmental and anthropogenic features on greater sage-grouse populations, 1997–2007. In *Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 407–450. Berkeley: University of California Press.

King, D.M. 1997. *Comparing Ecosystem Services and Values, with Illustrations for Performing Habitat Equivalency Analysis*. Prepared by King and Associates, Inc., Washington, D.C., for U.S. Department of Commerce, Silvery Spring, MD.

Kohler, K.E., and R.E. Dodge. 2006. Visual_HEA: Habitat equivalency analysis software to calculate compensatory restoration following natural resource injury. *Proceedings of 10th International Coral Reef Symposium*, pp. 1611–1616.

Lincoln County Sage Grouse Technical Review Team. 2004. *Lincoln County Sage Grouse Conservation Plan*. Nevada. Available at: http://www.ndow.org/wild/conservation/sg/plan/SGPlan063004_R.pdf. Accessed January 2012.

National Oceanic and Atmospheric Administration (NOAA). 2006. Habitat equivalency analysis: an overview. Available at: www.darrp.noaa.gov/library/pdf/heaoverv.pdf. Accessed July 2009.

———. 2009. Restoration economics, habitat equivalency analysis. Available online at: http://www.csc.noaa.gov/coastal/economics/habitatequ.htm. Accessed July 6, 2009.

Pruett, C.L., M.A. Patten, and D.H. Wolfe. 2009. Avoidance behavior by prairie grouse: implications for development of wind energy. *Conservation Biology* 23:5:1253–1259.

Stevens, B. 2011. Impacts of fences on greater sage-grouse in Idaho: Collision, mitigation, and spatial ecology. Master’s Thesis. University of Idaho, Moscow.

Stevens, B.S., D.E. Naugle, B. Dennis, J.W. Connelly, T. Griffiths, and K.P. Reese. 2013. Mapping sage-grouse fence-collision risk: Spatially-explicit models to target conservation implementation. *Wildlife Society Bulletin* 37(2):409–415.

Stiver, S.J., A.D. Apa, J.R. Bohne, S.D. Bunnell, P.A. Deibert, S.C. Gardner, M.A. Hilliard, C.W. McCarthy, and M.A. Schroeder. 2006. Greater Sage-grouse Comprehensive Conservation Strategy. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.

Stiver, S.J., E.T. Rinkes, and D.E. Naugle. 2010. Sage-grouse habitat assessment framework. Unpublished report. Boise, Idaho: Bureau of Land Management, Idaho State Office.

U.S. Fish and Wildlife Service (USFWS). 2013. *Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report*. U.S. Fish and Wildlife Service, Denver, CO. February 2013.

———. 2014. Greater Sage-grouse Range-Wide Mitigation Framework. Version 1.0. September 3, 2014.

Walker, B.L., D.E. Naugle, and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71:2644–2654.

Wisdom M.J., C.W. Meinke, S.T. Knick, and M.A. Schroeder. 2011. Factors associated with extirpation of sage-grouse. In *Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 451–474. Berkeley: University of California Press.

APPENDIX A

Greater Sage-grouse Habitat Service Metric for the Gateway South Project

A. Development of Habitat Service Metric for Habitat Equivalency Analysis

A habitat service metric was developed for the greater sage-grouse (*Centrocercus urophasianus*) using variables identified in the peer-reviewed literature as representative of greater sage-grouse habitat. Habitat service levels are intended to reflect both the quality of the habitat and the ability of the birds to use the habitat. For each of the eight metric variables, a habitat service score ranging from 0 to 3 (no services [contributing no value to habitat] to high services [optimal habitat]) was assigned, similar to the greater sage-grouse habitat assessment framework developed by Stiver et al. (2010) and the greater sage-grouse habitat suitability index developed by LaGory et al. (2012). Scoring habitat services is a critical step in the habitat equivalency analysis (HEA) process because it provides a way to measure the relative quality of specific habitat functions in a specific area.

The scores for this HEA are primarily based on information contained in the literature regarding greater sage-grouse habitat use and selection. When literature did not allow for direct assignment of value ranges for HEA scores, professional judgments were used. Professional judgments are associated with specific literature references when possible and/or confirmed with academic and agency biologists.

When a basic life requisite of greater sage-grouse is absent (vegetation is absent, the area is forested, or high levels of disturbance are present), the cell being scored is assigned a total service value of 0. When a measurements for particular variable within the metric (e.g., Variable 06, % sagebrush canopy cover) matches literature-based descriptions of sub-optimal conditions, that variable is given a service score of 0 (contributing no value to habitat), 1 (poor habitat), 2 (moderate habitat), or 3 (optimal habitat). For example, sagebrush canopy cover <1% would score a 0, canopy cover of 1% to 5% would score a 1, canopy cover of 5% to 15% or >35% would score a 2, and 15% to 35% canopy cover would score a 3 for that variable.

Scoring of the variables is categorical and each variable is given the same weight in the model. This approach is based on the best available data and is consistent with the general approach of LaGory et al. (2012, page 8) which is described as follows.

> In general, there was insufficient information in existing studies to determine relationships among variables and habitat suitability or relative contributions between variables/components. Therefore, for simplicity, we developed piecewise linear functions of suitability based on the assumption that all variables are of equal weight and applied these functions to geospatial layers to generate indices ranging from 0 (poor) to 100 (optimal). This approach is similar to that used for many of the U.S. Fish and Wildlife Service (USFWS) Habitat Suitability Index models in their Habitat Evaluation Procedure (available at http://www.fws.gov/policy/ESMindex.html).

While the individual variables are not weighted, the number of variables relating to a habitat attribute (e.g., six for vegetation vs. one for slope) and the size of the buffers (e.g., 1,000 meters [m] for high traffic roads vs. 200 m for low traffic roads) give some attribute categories more influence than others. In the metric, there are three variables that score sagebrush characteristics (sagebrush abundance index, sagebrush % canopy cover, and sagebrush canopy height), so areas that are not dominated by sagebrush will score low for these three variables, resulting in a lower overall score.

Greater sage-grouse habitat suitability publications vary in their baseline environmental conditions affecting a particular study site. Even studies within the same state may describe different suitable habitat conditions depending on elevation, precipitation zone, and other geographic or climatic factors affecting each study site.

No specific habitat studies have been conducted on the Gateway South Transmission Project's (GWS Project's) transmission line corridor alternatives, therefore the habitat metrics described below mostly rely on information presented in Bureau of Land Management (BLM) et al. (2000), Cagney et al. (2009), Connelly et al. (2000), Connelly et al. (2011), and other summary publications. Specific citations are given to support the habitat model framework when applicable.

A single habitat service metric is applied to the entire GWS Project corridor in order to standardize results. This approach assumes that optimal habitat or poor habitat for greater sage-grouse looks the same (that is, measures the same for the variables in the metric) regardless of its location, despite regional differences in habitat features and availability.

As a result, the best available habitat at the edge of the species' range may not score as high as the best available habitat in the center of the species' range, unless they have the same measurements for the variables in the metric. The following sections describe the development of the habitat service model variables.

A.1 Metrics of Greater Sage-grouse Habitat Services

The metric is only applied to areas that contain greater sage-grouse habitat by first only analyzing those areas that fall within the BLM's Priority General Habitat (PGH). Next, land cover types that are typically avoided by greater sage-grouse, also known as excluded lands, were assigned an overall metric score of 0 before the additive metric is applied to the remaining areas. Because these excluded lands have an HEA value of zero, disturbances of these lands require no mitigation in the HEA. These land cover types include all forest types, urban areas, open water, some introduced vegetation types, roadways and those areas <100 m from roadways with >6,000 annual average daily traffic (AADT) and <25 m of paved roads with <6,000 AADT), as well as well pads and mine footprints plus areas <25 m from the footprints (multiple sources per U.S. Fish and Wildlife Service listing decision in *Federal Register*; Johnson et al. 2011).

The metric for greater sage-grouse habitat services used in this HEA is an additive model (Table A.1) with a score adjustment for the presence of fences posing a high collision risk to greater sage-grouse during the lekking season. Each 30- by 30-m cell in the analysis area (within 2-kilometer [km] buffer from the project centerline) is scored separately by summing the scores of Variables 01 through 08 in that cell. The summed score is then multiplied by a factor that reduces the score where high risk fences are present. Each of the variables and the fence score adjustment is described in detail below.

Table A.1. Additive Variables in the Metric of Greater Sage-grouse Habitat Services

Variable Number	Variables Description	HEA Score Criteria				Primary Citations^
		3	2	1	0	
VAR01	Distance to high-traffic (>6,000 AADT) road, such as an interstate, federal, or state highway (meters)	>1,000	650–1,000	100–650	<100*	Craighead Beringia South (2008); Johnson et al. (2011); Pruett et al. (2009)
VAR02	Distance to low-traffic (<6,000 AADT) paved roads, heavily travelled gravel roads, well pads, mine footprints, transmission substations (meters)	>200	50–200	25–50	<25*	Connelly et al. (2004); Craighead Beringia South (2008); Johnson et al. (2011); Pruett et al. (2009)
VAR03	Percent slope	<10	10–30	30–40	>40	Beck (1977); Lincoln County Sage Grouse Technical Review Team (2004)
VAR04	Distance to occupied lek[†] (kilometers)	0–6.4	6.4–8.5	>8.5	N/A	Cagney et al. (2009); Connelly et al. (2000); Connelly et al. (2011); Holloran and Anderson (2005)
VAR05	Sagebrush abundance index (% of vegetation that is sagebrush within a 1-square-kilometer moving window)	50–95	30–50 or >95	10–30	0–10	Carpenter et al. (2010); Walker et al. (2007); Aldridge and Boyce (2007); Aldridge et al. (2008); Wisdom et al. (2011)
VAR06	Percent sagebrush canopy cover	15–35	5–15 or >35	1–5	<1	Cagney et al. (2009); Connelly et al. (2000); Stiver et al. (2010)
VAR07	Sagebrush canopy height (centimeters)	30–80	20 to <30 or >80	5–20	<5	Crawford et al. (2004); Connelly et al. (2000); Stiver et al. (2010)
VAR08	Distance of habitat to sage or shrub dominant (meters)	<90	90–275	275–1,000	>1,000	BLM et al. (2000); Connelly et al. (2000); Lincoln County Sage Grouse Technical Review Team (2004)

* Lands less than 100 meters from a high traffic road and less than 25 meters from a low traffic paved road or high traffic gravel road were given a total metric score of 0 (provides no habitat services), not just a score of 0 for these individual variables.

^ Greater sage-grouse habitat suitability publications vary in their descriptions of the baseline environmental conditions affecting a particular study site. Even studies within a single state may describe different suitable habitat conditions depending on elevation, precipitation zone, and other geographic or climatic factors affecting each study site. The habitat metric relied on generalizations presented in BLM et al. (2000), Cagney et al. (2009), Connelly et al. (2011), Connelly et al. (2000), Stiver et al. (2010), and other summary publications. Specific citations are given to support these generalizations when applicable. The same metric of habitat services was applied to the entire GWS Project area.

[†] Leks were classified as occupied if their 10-year attendance average was greater than 0.

AADT = annual average daily traffic

A.1.1 VAR01 and VAR02: Distance to Roads and Highways

Research into the effects of roads on greater sage-grouse is varied. For instance, in Colorado, Rogers (1964) mapped 120 leks with regard to distance from roads and found that 42% of leks were over 1.6 km (1 mile) from the nearest improved road, but that 26% of leks were within about 90 m (about 100 yards) of a county or state highway, and two leks were on a road. Connelly et al. (2004) also noted sage-grouse using roads for lek sites. In contrast, Craighead Beringia South (2008) reported results from a 2007 to 2009 study of greater sage-grouse seasonal habitat use in Jackson Hole, Wyoming. Results indicate that greater sage-grouse avoid areas within approximately 100 m of paved roads. Similarly, Pruett et al. (2009) found that lesser prairie-chickens (*Tympanuchus pallidicinctus*) avoided one of the two highways in the study by 100 m; however, some prairie-chickens crossed roads and had home ranges that overlapped the highways, thus roads did not completely exclude them from neighboring habitat. Johnson et al. (2011) examined the correlation between trends in lek attendance and the environmental and anthropogenic features within 5- and 18-km buffers around leks. They found that lek attendance declined over time with length of interstate highway within 5 km, although the authors note that this trend was based on relatively few data points and no pre-highway data were available for comparison. Interstate highways >5 km away and smaller state and federal highways had little or no effect on trends in lek attendance. Thresholds less than 5 km were not examined.

In the habitat services metric, Variable 01 is high-traffic road (>6,000 AADT), such as an interstate or U.S. highway, or state highway, and Variable 02 is low-traffic (<6,000 AADT) paved or unpaved roads. Those habitats within 100 m of Variable 01 roads and within 25 m of Variable 02 roads were considered to be excluded lands and therefore were given an overall score of 0 in the additive HEA model. In addition, in order to characterize the disturbance of mining, oil and gas, and other commercial vehicles, mine footprints and well pad footprints were classified and scored as if they were Variable 02 low-traffic roads making habitats within 25 m of these areas excluded lands as well. Finally, the Series Compression Station will also be classified and scored as if it is a Variable 02 low-traffic road in the model and habitats within 25 m of this area will also be considered excluded lands to help account for the noise and human presence associated with this facility.

Those habitats located farther than 1,000 m and 200 m of Variable 01 and Variable 02 roads, respectively, were considered the most serviceable to greater sage-grouse (that is, exhibited no decrease in lek attendance) and were given a score of 3. A logarithmic curve was fit between the highest and lowest categories so that score increased with distance from the road to estimate the distance breaks associated with scores 1 and 2. A logarithmic rate of change simulates sound attenuation rates better than a linear rate of change (Crocker 2007). Conflicting research results regarding greater sage-grouse use near and on unpaved resource/collector roads (e.g., two-track roads) did not allow for quantification of the disturbance caused by these roads in the model.

While the application of distances to all scores (0–3) is not perfectly supported in the peer-reviewed literature, our approach places a penalty upon habitats that are bisected by all types of large roadways. Penalties are higher for roads that typically have higher traffic levels and risk to greater sage-grouse (e.g., mortality from collision, noise disturbance) than less-utilized secondary roads that generally have less traffic and implied risk.

A.1.2 VAR03: Percent Slope

Slope was used to refine greater sage-grouse habitat potential. Greater sage-grouse generally use flat or gently sloping terrain (Connelly et al. 2011; Eng and Schladweiler 1972; Nisbet et al. 1983; Rogers 1964). Beck (1977) plotted the distribution of 199 greater sage-grouse flocks in Colorado and found that 66% of flocks were on slopes less than 5% and only 13% of flocks were on slopes greater than 10%. Areas with slopes greater than 40% are unsuitable for nesting habitat (Lincoln County Sage Grouse Technical Review Team 2004), but still have some value to greater sage-grouse and should be retained in the model (professional judgment of the HEA Technical Advisory Team). Therefore, areas with less than 5% slope were assigned a habitat service score of 3, and those exceeding 10% subjectively received incrementally lower habitat service scores. Slopes >40% did not add value to the habitat and received a score of 0 for this variable, but these areas may provide habitat services depending on the scores for the other variables.

A terrain roughness index was evaluated for use in place of the slope variable, as some studies have shown that it is a better indicator of greater sage-grouse use (Carpenter et al. 2010; Doherty et al. 2008; Doherty et al. 2010; Dzialak et al. 2011). However, there was substantial variation in the methods used to calculate the terrain roughness index (e.g., measure of roughness used and analysis window size) and region evaluated (e.g., Alberta, Canada, vs. Powder River Basin, Wyoming) by these studies. Given this variation, it was not possible to identify literature-supported cutoffs between scores for use in the model.

A.1.3 VAR04: Distance to Lek (10-year Average Count >0 Males)

Current greater sage-grouse habitat management guidance uses occupied leks, a gathering of males for mating purposes, as focal points for nesting habitat management (Connelly et al. 2000; Connelly et al. 2011); therefore, distance to lek was used as a variable in the habitat services metric. These guidelines recommend protecting sagebrush communities within 3.2 km (2 miles) of a lek in uniformly distributed habitats and 5.0 km (3.1 miles) in non-uniformly distributed habitats. Holloran and Anderson (2005) studied nesting greater sage-grouse at 30 leks in central and western Wyoming and determined that 45% and 64% of female greater sage-grouse nested within 3.2 km and 5.0 km of the lek where the hen was radio-collared, respectively. Moreover, statistical analyses suggested that the area of interest for nesting greater sage-grouse should be truncated at 8.5 km (5.3 miles) from a lek. Similar frequencies are reported in Cagney et al. (2009)—66% within 5.0 km and 75% within 6.4 km (4 miles) of a lek where the female bred.

Female greater sage-grouse do nest at distances greater than 8.5 km (the farthest distance reported in Holloran and Anderson [2005] was 27.4 km [17 miles]), so all distances >8.5 km from occupied leks were given a service score of 1 to reflect some potential use by nesting greater sage-grouse. Areas within 6.4 km of a lek provide the highest service level, because they provide female grouse with forage, roost sites, and cover from predators or inclement weather during the lekking season, in addition to containing lekking habitat and nesting habitat (Cagney et al. 2009), and were assigned a service score of 3 for this variable. Areas between 6.4 and 8.5 km were assigned a score of 2 for this variable.

A.1.4 VAR05: Sagebrush Abundance Index

Sage-grouse are sagebrush obligates, thus sagebrush abundance and quality are strong predictors of sage-grouse use and persistence. Walker et al. (2007) found that the proportion of habitat that was sagebrush within a 6.4 km moving window was a strong predictor of lek persistence in the Powder River Basin of Wyoming. The moving window is an analysis area that is larger than and centered on the cell being scored; in this case, the window is a 6.4-km buffer that moves as the cell being scored is changed. Areas with less than 30% of sagebrush within 6.4 km of the lek center had a lower probability of lek persistence. Aldridge and Boyce (2007) also used a moving window (1 km^2) to measure sagebrush cover and abundance. Their resource selection function found that greater sage-grouse selected nesting habitat that contained large patches (1 km^2) of sagebrush with moderate canopy cover and moderate sagebrush abundance (i.e., heterogeneous distribution of sagebrush). Carpenter et al. (2010) found similar results in Alberta, Canada. Their top resource selection functions included a quadratic function for sagebrush abundance, which indicates that areas of moderate sagebrush abundance were selected more frequently than areas of homogenous sagebrush.

Aldridge et al. (2008) (per Wisdom et al. [2011]) found that at least 25% of the landscape in a 30.77-km (19.1-mile) analysis area needed to be dominated by sagebrush for greater sage-grouse persistence, with 65% being preferred. Wisdom et al. (2011) found that landscapes with less than 27% sagebrush were not different from landscapes from which greater sage-grouse have been extirpated. Similar to Aldridge et al. (2008), Wisdom et al. (2011) found that 50% sagebrush across a landscape was a good indicator of greater sage-grouse persistence.

Participants in the HEA Technical Advisory Team indicated that greater sage-grouse prefer higher sagebrush abundance in the southern part of their range than is indicated by these studies. For example, the Colorado Parks and Wildlife (CPW) Avian Research Center has generally found a positive linear relationship between sagebrush abundance and measures of habitat selection (Brian Holmes, Colorado Parks and Wildlife, personal communication with Jon Kehmeier, SWCA Environmental Consultants [SWCA], on February 13, 2013). CPW has not observed an upper inflection point in the proportion of the landscape covered in sagebrush where use or selection begins to drop, and suggest that the difference may be due to the structure and composition of the sagebrush community (that is, silver sagebrush mixed grassland rangelands of Alberta [Aldridge and Boyce 2007; Carpenter et al. 2010] vs. big sagebrush steppe [GWS Project area]).

Sagebrush covering 50% to 95% of the landscape scored a 3 for this variable (Aldridge et al. 2008; Wisdom et al. 2011; professional judgment of HEA Technical Advisory Team). Sagebrush covering 30% to 50% or >95% scored a 2 for this variable (Aldridge et al. 2008). Sagebrush covering 10% to 30% scored a 1 (Walker et al. 2007; Wisdom et al. 2011) and sagebrush covering less than 10% scored a 0 for this variable (professional judgment of HEA Technical Advisory Team).

A.1.5 VAR06: Sagebrush Canopy Cover

Recommended sagebrush canopy cover (the proportion of land area covered by sagebrush crowns, as viewed from the air) for greater sage-grouse habitat varies seasonally. Seasonal habitats were not modeled, but seasonal differences in the selection for sagebrush cover were considered when developing habitat services metrics. The seasonal habitat needs of greater sage-grouse are described below, followed by scoring of percent sagebrush cover in the habitat services metric.

Seasonal Habitat Use

Nesting

Connelly et al. (2000) cite 13 references to sagebrush coverage that range from 15% to 38% mean canopy cover surrounding the nest. Citations contained within Crawford et al. (2004) reported 12% to 20% cover and 41% cover in nesting habitat. In their species assessment, Connelly et al. (2000) conclude that 15% to 25% canopy cover is the recommended range for productive greater sage-grouse nesting habitat. This is also the range identified in the greater sage-grouse habitat assessment framework (Stiver et al. 2010) as providing the highest service level for greater sage-grouse based on a review of the available literature. Wallestad and Pyrah (1974) reported that successful nests were in stands where sagebrush cover approximated 27%. This cover range is used as a goal in some greater sage-grouse management guidelines (Bohne et al. 2007; BLM et al. 2000). Cagney et al. (2009) guidelines for grazing in grouse habitat, which use information synthesized from over 300 sources, state that hens tend to select an average 23% live sagebrush canopy cover when selecting nesting sites.

Greater sage-grouse in Utah use habitats with higher sagebrush canopy cover than is observed in the northern and eastern portions of the species range, possibly due to the relative scarcity of understory grasses in Utah (Renee Chi, BLM, personal communication with Ann Widmer, SWCA, on March 22, 2013). Nest sites in Wildcat Knoll (part of the Emery-Sanpete population of Utah) were located in areas with an average of 33% shrub canopy cover for successful nests and 22% for unsuccessful nests (Perkins 2010). Nests in Parker Mountain were located at sites with an average canopy cover of 35.5% for big sagebrush and 32% for big sagebrush mixed with black sagebrush (Chi 2004; Renee Chi, BLM, personal communication with Ann Widmer, SWCA, on March 22, 2013). In the Sheeprock greater sage-grouse population, nest site shrub canopy cover measured an average of 62% in 2005 and 83.5% in 2006 (Robinson 2007).

Brood Rearing

Connelly et al. (2000) found that productive brood-rearing habitat should include 10% to 25% cover of sagebrush. This is the range used as a goal in greater sage-grouse management guidelines (Bohne et al. 2007; BLM et al. 2000). While sagebrush is a vital component of greater sage-grouse habitat, very thick shrub cover may inhibit understory vegetation growth and reduce the birds' ability to detect predators (Wiebe and Martin 1998).

Again, greater sage-grouse in Utah may use areas with higher canopy cover than is typical throughout the northern and eastern parts of their range. Grouse in the Sheeprock population were documented using areas with an average shrub canopy cover of 73% during brood rearing in 2005 and 2006 (Robinson 2007).

Winter

Connelly et al. (2000) cite 10 references to sagebrush coverage in winter-use areas that range from 15% to 43% mean canopy cover (Crawford et al. [2004] also cite two of these references in their assessment); however, they considered a canopy of 10% to 30% cover above the snow as a characteristic of sagebrush needed for productive greater sage-grouse winter habitat. This is the cover range used as a goal in greater sage-grouse management guidelines (Bohne et al. 2007; BLM et al. 2000). Greater sage-grouse in Utah may prefer higher cover in winter. In Emma Park, areas of high sagebrush cover were used disproportionally to their availability on the landscape, with an average of 38.3% sagebrush canopy cover in winter-use areas (Crompton and Mitchell 2005).

Scoring in Habitat Services Metric

In general, the recommended sagebrush cover for nesting habitats was intermediate to, and overlapped that of, brood-rearing and winter habitats. Thus, favorable conditions for nesting were given the highest scores for percent sagebrush cover in the greater sage-grouse habitat services metric.

This variable used the scores assigned by Stiver et al. (2010) for sagebrush cover categories in greater sage-grouse nesting habitat, with a slight adjustment to account for use of higher canopy cover in Utah. This adjustment is also consistent with the Colorado Greater Sage-Grouse Conservation Plan (Colorado Division of Wildlife et al. 2008). Sagebrush percent canopy cover of 15% to 35% was assumed to provide the highest level of services (score of 3) to nesting greater sage-grouse. This includes canopy covers that are 10% higher than the average ranges provided in Connelly et al. (2000) and Cagney et al. (2009). Areas with slightly less or more cover than this (55%–15% or >35%) were given a habitat services score of 2. Habitats with 1% to 5% cover received a score of 1 and those habitats with <1% cover received a score of 0.

A.1.6 VAR07: Sagebrush Canopy Height

Sagebrush canopy height is an important component of nesting and winter habitat, because it affects how well nests are concealed from predators and how much food is available above the snow. As described above, seasonal habitat models will not be developed for the GWS Project. However, seasonal habitat requirements were considered when developing habitat metric values. The seasonal habitat preferences of greater sage-grouse are described below and followed by the scoring of sagebrush height in the habitat services metric.

Seasonal Habitat Use

Nesting

Gregg et al. (1994, cited in Crawford et al. 2004) found that the area surrounding successful nests in Oregon consisted of medium-height (40 to 80 centimeters [cm]) sagebrush. Connelly et al. (2000) cite 11 references to sagebrush height that range from 29 to 79 cm mean height. In their assessment, Connelly et al. (2000) conclude that sagebrush with a height of 30 to 80 cm is needed for productive greater sage-grouse nesting habitat in arid sites and 40 to 80 cm in mesic (temperate) sites. These ranges are supported by Stiver et al. (2010) who recommend a range of 30 to 80 cm and BLM et al. (2000) who state that optimum greater sage-grouse nesting habitat consists of sagebrush stands containing plants 40 to 80 cm tall.

Winter

Important structural components in winter habitat include medium to tall (25–80 cm) sagebrush stands (Crawford et al. 2004). Connelly et al. (2000) cite 10 references for sagebrush height in winter habitat that range from 20 to 46 cm above the snow. Two studies measured the entire plant height and provided a range from 41 to 56 cm. In their assessment, Connelly et al. (2000) conclude that characteristics of productive winter habitat include sagebrush that is 25 to 35 cm in height above the snow. This is the height range used as a goal in greater sage-grouse management guidelines (Bohne et al. 2007; BLM et al. 2000).

Scoring in Habitat Services Metric

Sagebrush canopy heights that provided high-quality nesting habitat generally also provided high-quality winter habitat for greater sage-grouse. Thus, favorable conditions for nesting were given the highest scores for sagebrush canopy height in the greater sage-grouse habitat services metric.

The sagebrush cover scores assigned for nesting habitat in the greater sage-grouse habitat assessment framework by Stiver et al. (2010) to different sagebrush cover categories were assigned to this variable. Areas of sagebrush with a height of 30 to 80 cm were assigned a habitat services score of 3. As sagebrush canopy height decreases, the value of a sagebrush plant to provide cover for nesting females and their nests is diminished. Additionally, low-lying sagebrush is less available to greater sage-grouse during the winter due to snow cover. Areas with canopy heights greater than 80 cm provided intermediate levels of services because they may provide relatively poor cover for nesting greater sage-grouse and have foliage that is difficult for greater sage-grouse to access during mild and moderate winters. Consistent with Stiver et al. (2010), sites with sagebrush from 20 to 30 cm or >80 cm in height received a score of 2. Areas with minimal sagebrush canopy heights were considered to have the lowest habitat service value so sagebrush that ranged from 5 to 20 cm in height received a score of 1 and sagebrush that was <5 cm in height received a score of 0.

A.1.7 VAR08: Distance to Vegetation Dominated by Sagebrush or Shrub

Greater sage-grouse use shrubby habitats including sagebrush during the brood-rearing season (Connelly et al. 2000) and for grouse movement and dispersal (Stiver et al. 2010). Close proximity to shrubby vegetation increases the service value of all vegetation types modeled because shrubby vegetation provides cover from predators, facilitates grouse movement, and supports population connectivity.

The Lincoln County Sage Grouse Technical Review Team (2004) identified proximity to sagebrush cover as an important component in habitat suitability of non-sagebrush, brood-rearing habitats (e.g., mesic lowland habitats, hay meadows). The Team considered brood-rearing areas within <100 yards (91 m), 100 to 300 yards (275 m), and >300 yards of sagebrush cover as suitable, marginal, and unsuitable habitat, respectively. Similarly, Stiver et al. (2010) considered mesic habitats <90 m, 90 to 275 m, and >275 m of sagebrush to be suitable, marginal, and unsuitable late brood-rearing/summer habitat, respectively. These categorizations support the concept of increasing service level with proximity to shrubs, particularly sagebrush.

The distance to vegetation dominated by sagebrush or shrub variable (VAR08) measured the distance of the cell being scored (regardless of its vegetation type) to the next nearest cell that was dominated by sagebrush or a shrub species, including willows. For this variable, cells <90 m, 90 to 275 m, 275 to 1,000 m, and >1,000 m to a cell dominated by a shrub species were assigned scores of 3, 2, 1, and 0, respectively. The scoring was based on the breakpoints identified in the literature for distances up to 275 m and professional judgment by the HEA Technical Advisory Team for distances >275 m. The scores were applied to all vegetation types, because this variable is relevant to bird movement and dispersal from all habitat types.

A.1.8 Score Adjustment Factor: Fences that Pose a High Risk for Collision

Habitat within and surrounding the GWS Project transmission line corridor is currently influenced by fences used for livestock management. These fences are typically constructed from barbed wire and are used to control livestock movements and vegetation use within grazing allotments and pastures, to delineate or protect private property and agricultural croplands, and to restrict livestock from improved and unimproved roadways.

Fence collisions have been reported as a cause of significant injury and mortality to grouse species (greater sage-grouse [Braun 2006; Call and Maser 1985; Connelly et al. 2004; Christiansen 2009; Danvir 2002; Stevens, Connelly, et al. 2012]; lesser prairie-chicken [Wolfe et al. 2007]; ptarmigan [*Lagopus lagopus* and *L. mutus*] [Bevanger and Broseth 2000]; and red grouse [*Lagopus lagopus scoticus*], black grouse [*Tetrao tetrix*], and white capercaillie [*T. urogallus*] [Baines and Summers 1997; Catt et al. 1994; Petty 1995]). In addition to direct mortality, fences provide corridors for mammalian predators increasing the opportunity for predation of hens and broods (Braun 1998). Unlike the additive variables in the metric, which are primarily meant to characterize use and avoidance of habitat by greater sage-grouse, the distance to high risk fences was added to account for the potential direct loss of greater sage-grouse and not the greater sage-grouse avoidance of fences.

In Wyoming, Christiansen (2009) reported preliminary results of a multiple-year study (2005–ongoing) near Farson on greater sage-grouse fence strikes and mortalities and the utility of fence markers on reducing collisions. After installation of fence markers on portions of high-risk fences, grouse mortality decreased by 70%. Although the study did not compare the number of strikes with regard to distance to lek, the author recommends that fences should not be located within 0.25 mile (0.4 km) of leks.

In Idaho, Stevens (2011), Stevens, Connelly, et al. (2012), and Stevens, Reese, et al. (2012) evaluated the environmental features associated with greater sage-grouse fence collision risk and tested the efficacy of reflective vinyl fence markers to reduce collision rates at eight study sites. Modeling of these data predicted marking fences reduced collision rates by 74% to 83% at the mean lek size and fence distance from the lek during the breeding season. However, it should be noted that collision probability varied by region, topography, fence type, fence density, and lek proximity. Areas with high slope or terrain ruggedness generally showed lower collision risk than flat areas. Collisions were also more common on fence segments bound by steel t-posts with spans between posts exceeding 4 m. Collision probability increased with fence length per km^2 and proximity to nearest active lek.

For this variable, fences segments having a high risk for collision were identified using the model by Stevens et al. (2013), which is determines the fence-collision risk from proximity to lek and a terrain roughness index (Equation A.1).

Equation A.1

$$\hat{y} = 78 * \exp(\beta_0 + \beta_1 * TRI + \beta_2 * distance)$$

Where:

$\hat{y}$ is an estimate of the total number of greater sage-grouse collisions over a 78-day lekking season for each $900m^2$ pixel if a fence is present;

β_0 = -3.325 (regression intercept per Bryan Stevens, University of Idaho, personal communication with Ann Widmer, SWCA, on February 14, 2014);

β_1= -0.25;

β_2 = -0.0006;

TRI is a terrain roughness index calculated using ArcInfo; and

$distance$ is the distance from each 900m^2 pixel to the nearest greater sage-grouse lek in GIS using the Euclidean distance function (up to 3 km).

The additive metric score (the sum of VAR01 through VAR08) for a cell was multiplied by an adjustment factor that reduced if a fence intersected the cell and the cell was located within 3 km of a greater sage-grouse lek (i.e., it was scored by the Stevens et al. 2013 model). The adjustment factor for each probability of collision is provided in Table A.2. Allotment boundaries were used as a surrogate for fence lines. Following the convention established by Stevens et al. 2013, the arbitrary threshold of 1 grouse collision per lekking season was used as the breaking point between our score adjustment categories. The other category break was established based on a natural break in the data distribution.

Table A.2. Cell Score Adjustment for the Presence of Fences Posing a High Collision Risk

$\hat{y}$ (predicted total number of greater sage-grouse collisions per lekking season)	Score Adjustment Factor
0.00–<0.40	0.75
≥0.40–<1.00	0.50
≥1.00	0

Here are three examples of the application of the fence score adjustment factor. In the first, there is a cell with an additive score of 10 (the sum of VAR01–VAR08) that is located within 3 km of a lek and has a fence running through it. The Stevens et al. 2013 model predicts 0.2 collision per lekking season for a fence in that cell, so the additive score of 10 is multiplied by 0.75 for a final metric score of 7.5 for that cell. In the second example, there is another cell with an additive score of 10 that is located within 3 km of a lek and has a fence running through it. The Stevens et al. 2013 model predicts 1.4 collisions per year a fence in this cell, so the additive score of 10 is multiplied by 0 to produce a final metric score of 0 (no habitat services). In the third example, there is a cell with an additive score of 10 that has a fence running through it, but the cell is located 4 km from a lek. The Stevens et al. 2013 model does not produce an estimated number of collisions for this cell because it is located more than 3 km from a lek so the fence is considered to have a relatively low collision risk during the lekking season and the cell retains its full value (no adjustment).

A.2 Literature Cited

Aldridge, C.L., and M.S. Boyce. 2007. Linking occurrence and fitness to persistence: Habitat based approach for endangered Greater Sage Grouse. *Ecological Applications* 17(2)508–526.

Aldridge C.L., S.E. Nielsen, H.L. Beyer, M.S. Boyce, J.W. Connelly, S.T. Knick, and M.A. Schroeder. 2008. Range-wide patterns of greater sage-grouse persistence. *Diversity and Distributions* 17:983–994.

Baines, D., and R.W. Summers. 1997. Assessment of bird collisions with deer fences in Scottish forests. *Journal of Applied Ecology* 34:941–948.

Beck, T.D.I. 1977. Sage grouse flock characteristics and habitat selection during winter. *Journal of Wildlife Management* 41:18–26.

Bevanger, K., and H. Broseth. 2000. Reindeer *Rangifer tarandus* fences as a mortality factor for ptarmigan *Lagopus* spp. *Wildlife Biology* 6:121–127.

Bohne, J., T. Rinkes, and S. Kilpatrick. 2007. *Sage-Grouse Habitat Management Guidelines for Wyoming*. Wyoming Game and Fish Publication. July 24.

Braun, C.E. 1998. Sage-grouse declines in western North America: what are the problems. Proceedings of the Western Association of State Fish and Wildlife Agencies 78:139–156.

———. 2006. *A Blueprint for Sage-Grouse Conservation and Recovery*. Tucson: Grouse Inc.

Bureau of Land Management (BLM), U.S. Fish and Wildlife Service, U.S. Forest Service, Oregon Department of Fish and Wildlife, and Oregon Division of State Lands. 2000. *Greater Sage-grouse and Sagebrush-steppe Ecosystem: Management Guidelines.*

Cagney, J., E. Bainter, B. Budd, T. Christiansen, V. Herren, M. Holloran, B. Rashford, M. Smith, and J. Williams. 2009. Grazing influence, management and objective development in Wyoming greater sage-grouse habitat with emphasis on nesting and early brood rearing. Unpublished report. Available online at http://gf.state.wy.us/wildlife/wildlife_management/sagegrouse/index.asp. Accessed December 2009.

Call, M.W., and C. Maser. 1985. *Wildlife Habitats in Managed Rangelands – The Great Basin of Southeastern Oregon: Sage Grouse.* General Technical Report PNW-187. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station.

Carpenter, J., C. Aldridge, and M.S. Boyce. 2010. Sage-grouse habitat selection during winter in Alberta. *Journal of Wildlife Management* 74(8):1806–1814.

Catt, D.C., D. Dugan, R.E. Green, R. Moncrieff, R. Moss, N. Picozzi, R.W. Summers, and G.A. Tyler. 1994. Collisions against fences by woodland grouse in Scotland. *Forestry* 67:105–118.

Chi, R.Y. 2004. Greater sage-grouse reproductive ecology and tebuthiuron manipulation of dense big sagebrush on Parker Mountain. M.S. thesis, Utah State University, Logan.

Christiansen, T. 2009. *Fence Marking to Reduce Greater Sage-grouse (*Centrocercus urophasianus*) Collisions and Mortality near Farson, Wyoming – Summary of Interim Results*. Wyoming Game and Fish Department. Available online at http://pbadupws.nrc.gov/docs/ML1108/ML110830116.pdf. Accessed January 2012.

Colorado Division of Wildlife, USDA Forest Service, USDA Natural Resource Conservation Service, U.S. Bureau of Land Management, and U.S. Fish and Wildlife Service. 2008. *Colorado Greater Sage-Grouse Conservation Plan*. January 2008. Available online at http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/Pages/GreaterSageGrouseConsPlan2.aspx. Accessed March 2013.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Unpublished report. Cheyenne, Wyoming: Western Association of Fish and Wildlife Agencies.

Connelly, J.W., E T. Rinkes, and C.E. Braun. 2011. Characteristics of greater sage-grouse habitats: a landscape species at micro- and macroscales. In *Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 69–83. Berkeley: University of California Press.

Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. *Wildlife Society Bulletin* 28:967–985.

Craighead Beringia South. 2008. Wildlife Workshop: Monitoring Sage Grouse with GPS Transmitters, Implications for Home Range and Small Scale Analysis: A Preliminary Look. Jonah Interagency Mitigation and Reclamation Office.

Crawford, J.A., R.A. Olson, N.E. West, J.C. Mosely, M.A. Schroeder, T.D. Whitson, R.F. Miller, M.A. Gregg, and C.S. Boyd. 2004. Synthesis paper: ecology and management of sage-grouse and sage-grouse habitat. *Journal of Range Management* 57:2–19.

Crocker, M.J. 2007. *Handbook of Noise and Vibration Control*. Hoboken, New Jersey: John Wiley and Sons, Inc.

Crompton, B., and D. Mitchell. 2005. *The Sage-grouse of Emma Park—Survival, Production, and Habitat Use in Relation to Coalbed Methane Development*. Utah Division of Wildlife Resources. December 2005.

Danvir, R.E. 2002. *Sage Grouse Ecology and Management in Northern Utah Sagebrush-Steppe*. Woodruff, Utah: Deseret Land and Livestock Ranch and the Foundation for Quality Resource Management.

Doherty, K.E., D.E. Naugle, B.L. Walker. 2010. Greater sage-grouse nesting habitat: the importance of managing at multiple scales. *Journal of Wildlife Management* 74(7):1544–1553.

Doherty, K.E., D.E. Naugle, B.L. Walker, and J.M. Graham. 2008. Greater sage-grouse winter habitat selection and energy development. *Journal of Wildlife Management* 72(1):187–195.

Dzialak, M.R., C.V. Olsen, S.M. Harju, S.S. Webb, J.P. Mudd, J.B. Winstead, and L.D. Hayden-Wing. 2011. *Identifying and Prioritizing Greater Sage-grouse Nesting and Brood-rearing Habitat for Conservation in Human-Modified Landscapes*. PLoS ONE 6(10): e26273. doi:10.1371/journal.pone.0026273.

Eng, R.L., and P. Schladweiler. 1972. Sage grouse winter movements and habitat use in central Montana. *Journal of Wildlife Management* 36:141–146.

Gregg, M.A., J.A. Crawford, M.S. Drut, and A.K. DeLong. 1994. Vegetative cover and predation of sage-grouse nests in Oregon. *Journal of Wildlife Management* 58:162–166.

Holloran, M.T., and S.H. Anderson. 2005. Spatial distribution of greater sage-grouse nests in relatively contiguous sagebrush habitats. *The Condor* 107:742–752.

Johnson, D.H., M.J. Holloran, J.W. Connely, S.E. Hanser, C.L. Amundson, and S.T. Knick. 2011. Influences of environmental and anthropogenic features on greater sage-grouse populations, 1997–2007. In *Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 407–450. Berkeley: University of California Press.

LaGory, K.E., Y. Hamada, P.F. Tarpey, E.B. Levine, C.C. Weber, L.J. Walston, and D.J. LePoire. 2012. *A Spatially Explicit Individual-Based Modeling Approach to Evaluate the Cumulative Effects of Wind Energy Development on the Greater Sage-grouse*. Prepared by Argonne National Laboratory, Argonne, IL, for the U.S. Department of Energy, Washington, D.C. September 2012. 56 pp.

Lincoln County Sage Grouse Technical Review Team. 2004. *Lincoln County Sage Grouse Conservation Plan*. Nevada. Available online at http://www.ndow.org/wild/conservation/sg/plan/SGPlan063004_R.pdf. Accessed January 2012.

Nisbet, R.A., S.H. Berwick, and K.L. Reed. 1983. A spatial model of sage grouse habitat quality. *Developments in Environmental Modeling* 5:267–276.

Perkins, C.J. 2010. Ecology of isolated greater sage-grouse populations inhabiting the Wildcat Knolls and Horn Mountain, Southcentral Utah. M.S. thesis, Utah State University, Logan.

Petty, S.J. 1995. *Assessment of Fence Collisions by Grouse Species in Scotland*. Forestry Commission Research Information Note 264.

Pruett, C.L., M.A. Patten, and D.H. Wolfe. 2009. Avoidance behavior by prairie grouse: implications for development of wind energy. *Conservation Biology* 23:5:1253–1259.

Robinson, J.D. 2007. Ecology of two geographically distinct greater sage-grouse populations inhabiting Utah's West Desert. M.S. thesis, Utah State University, Logan.

Rogers, G.E. 1964. *Sage Grouse Investigations in Colorado*. Technical Bulletin No. 16. Denver: Colorado Game, Fish and Parks Department.

Stevens, B. 2011. Impacts of fences on greater sage-grouse in Idaho: collision, mitigation, and spatial ecology. M.S. thesis, University of Idaho, Moscow.

Stevens, B.S., J.W. Connelly, and K.P. Reese. 2012. Multi-scale assessment of greater sage-grouse fence collision as a function of site and broad scale factors. *Journal of Wildlife Management* 76(7):1370–1380.

Stevens, B.S., D.E. Naugle, B. Dennis, J.W. Connelly, T. Griffiths, and K.P. Reese. 2013. Mapping sage-grouse fence-collision risk: Spatially-explicit models to target conservation implementation. *Wildlife Society Bulletin* 37(2):409–415.

Stevens, B.S., K.P. Reese, J.W. Connelly, and D.D. Musil. 2012. Greater sage-grouse and fences: does marking reduce collisions? *Wildlife Society Bulletin* 36:297–303.

Stiver, S.J., E.T. Rinkes, and D.E. Naugle. 2010. Sage-grouse habitat assessment framework. Unpublished report. Boise, Idaho: Bureau of Land Management, Idaho State Office.

Wallestad, R.O., and D.B. Pyrah. 1974. Movement and nesting of sage grouse hens in central Montana. *Journal of Wildlife Management* 38:630–633.

Walker, B.L., D.E. Naugle, and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71:2644–2654.

Wiebe, K.L., and K. Martin. 1998. Costs and benefits of nestcover for ptarmigan: changes within and between years. *Animal Behaviour* 56:1137–1144.

Wisdom M.J., C.W. Meinke, S.T. Knick, and M.A. Schroeder. 2011. Factors associated with extirpation of sage-grouse. In *Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats*, edited by S.T. Knick and J.W. Connelly, pp. 451–474. Berkeley: University of California Press.

Wolfe, D.H., M.A. Patten, E. Shochat, C.L. Pruett, and S.K. Sherrod. 2007. Causes and patterns of mortality in lesser prairie-chickens (*Tympanuchus pallidicinctus*) and implications for management. *Wildlife Biology* 13 (Suppl. 1):95–104.

APPENDIX B

Quantification of Baseline Habitat Service Level

B. Quantification of Baseline Habitat Service Level

The pre-construction baseline of the habitat services was based on existing datasets to the extent possible. The baseline service level was determined by applying the habitat service metrics described in Appendix A to the Assessment Area that is identified for the Gateway South Transmission Project (GWS Project). The Assessment Area included the footprint of the Project and a 2-kilometer (km) buffer around the footprint, because greater sage-grouse (*Centrocercus urophasianus*) habitat service losses are expected to extend beyond the area of direct disturbance. In addition, the buffered footprint was clipped to the Bureau of Land Management's (BLM's) Priority General Habitat (PGH) boundaries.

ESRI ArcGIS 10.2 software and tools were used to conduct analyses. To facilitate calculations across the entire Assessment Area, all data were converted to a raster format that contained 30- by 30-m cells (900 m^2). This was done because raster processing is significantly faster for an analysis of this size as opposed to leaving the data raw (shapefiles).

B.1 Preparation of GIS Model Input Layers

Habitats within and surrounding the corridor for the preferred alternative are summarized in a series of representative raster layers for the eight additive metric variables and the fence adjustment factor (see Appendix A). These eight variables consist of data representations within the GWS Project area for human disturbance, landscape characteristics, proximity to greater sage-grouse lek locations, and vegetation characteristics that may influence the use of habitat by greater sage-grouse. A spatial resolution of 900 m^2 was sufficient to capture a landscape level perspective of habitat across the Assessment Area. The data used in the habitat equivalency analysis (HEA) are summarized in Table B.1. All data were georeferenced to the same projected coordinate system, NAD 1983 UTM Zone 12N.

Table B.3. GIS Data Sources

Variable	File Name	Description	File Type	Source
Fence Adjustment	BLM_Grazing_Allotments	Grazing Allotments	Shapefile	BLM
excluded lands, VAR07, VAR08	gaplndcov_co	30m National Gap Analysis Program land cover data - version 2	Raster	USGS
excluded lands, VAR07, VAR08	gaplndcov_ut	30m National Gap Analysis Program land cover data - version 2	Raster	USGS
excluded lands, VAR07, VAR08	gaplndcov_wy	30m National Gap Analysis Program land cover data - version 2	Raster	USGS
VAR01	ROADWAY.Major_Roads	Colorado Major Roads	SDE Feature Class	CDOT
VAR02	PermitData	Permitted Mines - Colorado	Shapefile	COGCC
VAR02	Wells_WY_20140107	Oil & Gas Wells - Wyoming	Shapefile	WOGCC
VAR02	DNROilGasWells	Oil & Gas Wells - Utah	Shapefile	CDNR
VAR02	Wells	Oil & Gas Wells - Colorado	Shapefile	COGCC
VAR02	Minerals	Mines and Minerals - Utah	Geodatabase	UDNR
VAR02	facilities	Open pit mines - Colorado	Shapefile	CDNR
VAR02	mineplant_fUS08	Mines - Colorado	Shapefile	USGS
VAR02	mineplant_fUS49	Mines - Utah	Shapefile	USGS
VAR02	mineplant_fUS56	Mines - Wyoming	Shapefile	USGS
VAR02	tl_2013_08081_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_08103_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49007_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49013_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49023_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49039_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49047_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49049_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_49051_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census

Variable	File Name	Description	File Type	Source
VAR02	tl_2013_56007_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
VAR02	tl_2013_56037_roads	All roads where MTFCC = S1100, S1200, S1400, S1630, S1640, S1740. County, St	Shapefile	US Census
Fences, VAR03, VAR05, VAR06, VAR07, VAR08	ned30_utm83	30 m resolution digital elevation data	Raster	USGS
Fence Adjustment, VAR04	CPW_GrSGLekCnt2013	Colorado Leks	Shapefile	CPW
VAR01	WYDOT_LRS	Wyoming Highways	Shapefile	WYDOT
VAR01	AADT	Utah Highways	Shapefile	UDOT
VAR05, VAR06, VAR07, VAR08	US_VDIST2008	Vegetation Distribution	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110VDEP	Vegetation Development	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110EVT	Exisisting Vegetation Type	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110CBD	Canopy Bulk Density	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110VCC	Canopy Cover	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110FLM	Fuel Loading Model	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110EVH	Exisisting Vegetation Height	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110CBH	Canopy Bulk Height	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_FDIST2008	Vegetation Disturbance	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110SCLASS	Succession Class	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110MFRI	Mean Fire Return Interval	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110BPS	Biophyisical Setting	Raster	USGS
VAR05, VAR06, VAR07, VAR08	US_110EVC	Existing Vegetation Cover	Raster	USGS
Fence Adjustment, VAR04	1383occleks	Wyoming Leks	Shapefile	WGFD
Fence Adjustment, VAR04	1383undetleks	Wyoming Leks	Shapefile	WGFD
Fence Adjustment, VAR04	Sage_Grouse_Leks_Occupied_Utah	Utah Leks	Shapefile	UNHP
Fence Adjustment, VAR04	Sage_Grouse_Leks_Price_Utah	Utah Leks	Shapefile	UNHP
Fence Adjustment, VAR04	Sage_Grouse_Leks_Utah_BLM_Vernal	Utah Leks	Shapefile	UNHP

B.2 Lands Assigned No Habitat Value

As described in Appendix A, land cover types and terrain features that do not provide suitable habitat for greater sage-grouse were removed from the HEA model. All vegetation types and landforms that potentially provide habitat for greater sage-grouse remained in the model (listed in Appendix E). Vegetation cover for the analysis was identified using the National Gap Analysis Program (GAP) Vegetation Classifications.

B.2.1 VAR 01 and VAR 02: Distance to Roads

Road layers used in developing the baseline HEA model are available from the state departments of transportation and from TIGER data from the U.S. Census Bureau. Road layers were compared between states to ensure consistency in classification prior to using them in the HEA model development. HEA model scores were applied to 30- by 30-m raster cells according to the process described in Table A.1.

In Variable 01, all cells that are more than 1,000 m from road centerlines with >6,000 annual average daily traffic (AADT) were given a score of 3; those between 650 and 1,000 m were given a score of 2; those between 100 and 650 m were given a score of 1; and those cells within 100 m were assigned a value of 0 habitat services in the model per the description provided in Appendix A (Metric of Greater Sage-grouse Habitat Services).

For Variable 02, all cells that are more than 200 m from road centerlines with <6,000 AADT were given a score of 3; those between 650 and 1,000 m were given a score of 2; those between 100 and 650 m were given a score of 1; and those cells within 100 m were assigned a value of 0 habitat services in the model per the description provided in Appendix A (Metric of Greater Sage-grouse Habitat Services).

B.2.2 VAR03: Percent Slope

The slope was calculated using 30- by 30-m digital elevation models obtained using 30-m National Elevation Dataset.

B.2.3 VAR04: Distance to Lek (10-year Average Count >0 Males)

Lek data were obtained from the wildlife management agencies in each state. Lek status was determined for all leks. Leks that have been active in the past 10 years or that have an unknown status were included in the HEA model. Those that are labeled as unoccupied or inactive were not included. Cells surrounding leks were scored according to the methods described in Appendix A with cells closest to leks receiving the highest scores.

B.2.4 VAR05: Sagebrush Abundance Index

A sagebrush abundance index was determined from available vegetation layers using Landfire data from the USGS by calculating the proportion of sagebrush in a 1 km^2 area surrounding each 30- by 30-m cell in the Assessment Area. Scores were applied using the methods described in Appendix A. Areas with a high proportion of sagebrush in the landscape and some habitat heterogeneity were scored higher than areas with little habitat heterogeneity or areas with little or no sagebrush.

B.2.5 VAR06 and VAR 07: Sagebrush Cover, Sagebrush Canopy Height

When possible, percent cover and height was determined directly from the vegetation attribute data included in the GAP and Landfire vegetation datasets. Where data were not available, attributes for percent cover and height were determined using other data sources. Sampling data from GAP/Landfire datasets as well as datasets obtained from BLM and the state agencies were used to attribute vegetation percent cover and height for segments of the landscape with the most similar characteristics. Once vegetation values were applied to the 30-m grid, HEA scores were applied using the methods described in Appendix A.

B.2.6 VAR08: Distance to Vegetation Dominated by Sagebrush or Shrub

The distance from each cell to the nearest sagebrush- or shrub-dominated cell was calculated. Cells within or closest to sagebrush or shrub landscapes were scored higher than those that are distant from shrub-dominated cells.

B.3 Score Adjustment Factor: Fences that Pose a High Risk for Collision

A raster file was produced by running the Stevens et al. (2013) model as described in Appendix A, Section A.1.8, to estimate the greater sage-grouse collision risk during the lekking season within 3 km of leks. The Stevens et al. (2013) model does not consider actual fence locations, so a separate fence location dataset was intersected with the results of the model to identify actual locations of high collision risk.

Fence locations were used if the data were available for the entire assessment area. In the event that fence data were not available, grazing allotment boundaries were used as surrogates for fence layers in the HEA baseline model development.

After the model results and fence layer were intersected, cells in the resulting raster file were assigned to different score adjustment factors as described in Appendix A. Every cell with a fence running through it that is located within 3 km of a lek had an estimated number of collisions per lekking seasons. If the estimate was between 0 and 0.39, the adjustment factor is 0.75. If the estimate was between 0.40 and 0.99, the adjustment factor is 0.50. If the estimate was 1.0 or above, the adjustment factor is 0 (i.e., cells containing the highest risk fences have no habitat value).

B.4 Summation of Baseline Services in the HEA Model

Below is a summation of the steps that were taken to produce a final HEA Service Raster for analysis in the HEA.

1. Rasters for each of the eight additive variables were added together to create an additive variable raster layer.
2. The additive variable raster layer was multiplied by a value of 0 or 1 to remove all excluded lands. 0 was used to represent an excluded land, which would therefore make the overall HEA value for any cell interesting it to be zero, while a 1 represents any areas that are not excluded lands which would retain the additive HEA value for any cell crossing it.

3. The raster that was created in step 2 was then multiplied by the Fence Collision Adjustment Factor. The final numeric value for each cell is the habitat services provided to greater sage-grouse by that cell.

The resulting habitat service values and the number of acres associated with each of the habitat service values were multiplied together and summed across the Assessment Area to calculate the total habitat services (expressed in service acres) (Equation 1). The total habitat services provided by the Assessment Area (those habitats within a 2-km buffer from the Project centerline and within BLM PGH) were calculated and serve as the baseline for the GWS Project.

Equation B.2.

$$VJ = \sum_{1}^{i} (V_i * J_{V_i})$$

where:

VJ is the habitat services (service-acres) provided by the Assessment Area;

V is the habitat service score (i.e., the sum of the variable scores in the habitat service metric);

i is the number of possible unique values for *V*; and

J_{V_i} is the number of acres for each value of V_i, where $\sum_{1}^{i} J_{V_i}$ would equal the total acreage of the Assessment Area (*J*).

B.5 Literature Cited

Stevens, B.S., D.E. Naugle, B. Dennis, J.W. Connelly, T. Griffiths, and K.P. Reese. 2013. Mapping sage-grouse fence-collision risk: Spatially-explicit models to target conservation implementation. *Wildlife Society Bulletin* 37(2):409–415.

APPENDIX C

Quantification of Habitat Service Losses

C. Quantification of Habitat Service Losses

Habitat service losses caused by the Gateway South Transmission Project (GWS Project) were modeled using geographic information system (GIS) technology for important GWS Project milestones by decreasing the variable scores for the habitat services metric below the baseline level in the footprint of the GWS Project (direct disturbances) and in buffers around the footprint (indirect disturbances). The habitat service scores for each milestone were summed across the Assessment Area to calculate the estimated interim and permanent habitat service losses associated with the GWS Project.

C.1 Description of Disturbances by GWS Project Milestone

The habitat services provided by the Assessment Area were measured at several different GWS Project milestones that reflected varying levels of disturbance.

The following GWS Project milestones were modeled for the habitat equivalency analysis (HEA).

Baseline—the baseline milestone quantifies habitat services available to greater sage-grouse (*Centrocercus urophasianus*) before disturbance. The calculation of the habitat services available to greater sage-grouse at baseline is described in Appendix B.

Construction—the transmission line construction milestone quantifies habitat services available to greater sage-grouse during the construction of the GWS Project.

Restoration—the restoration milestone quantifies habitat services available to greater sage-grouse after GWS Project construction is complete and some services return with the reduction in noise and human presence.

Recovery—there are four recovery milestones that quantify habitat services available to greater sage-grouse after a vegetation type has recovered to the greatest extent expected after GWS Project restoration is complete. Habitat services return to baseline conditions in restored areas with the time to recovery being dependent on the vegetation type. It is anticipated that there will be multiple vegetation-based recovery endpoints. Vegetation recovery endpoints will be determined upon identification of the vegetation communities impacted by the GWS Project.

C.2 Quantifying Loss of Habitat Services Due to Surface Disturbance during Construction

For the construction milestone, direct disturbances were defined as the loss of habitat services associated with vegetation removal and ground-disturbing activities within the construction footprint (Table C.1). The habitat service scores for all 30- by 30-meter (m) raster cells in the GWS Project footprint where vegetation removal or ground disturbance occur were changed from the baseline service scores to 0 in the GIS model for this milestone. Recovery from the disturbed state was applied per the vegetation-specific recovery curves for the GWS Project.

Table C.4. Direct Disturbance Levels Modeled by GWS Project Milestone and Disturbance Type

Project Milestones	**Project Year Applied in Wyoming and Colorado**	**Project Year Applied in Utah**	**Percent Baseline Services Present at Each Milestone by Direct Disturbance Type**		
			Series Compensation Stations	**Transmission Towers* (360 feet^2 of the pad[†])**	**New and Existing Access Roads, Helicopter Pads, Transmission Towers (remainder of pad), Pulling/Tensioning Site, and Elsewhere[‡]**
Baseline	0	0	100%	100%	100%
Construction	1, 2	1, 2, 3	0%	0%	0%
Restoration	3	4	0%	0%	0%
Recovery 1	4	5	0%	0%	100% of agricultural and wetland 20% of grassland and riparian 5% of shrub 1% of sagebrush
Recovery 2	8	9	0%	0%	100% of agricultural and wetland 100% of grassland and riparian 25% of shrub 5% of sagebrush
Recovery 3	23	24	0%	0%	100% of agricultural and wetland 100% of grassland and riparian 100% of shrub 20% of sagebrush
Recovery 4	103	104	0%	0%	100% of agricultural and wetland 100% of grassland and riparian 100% of shrub 100% of sagebrush

* The self-supporting steel lattice tower is assumed for this analysis.

[†] Tower pad in this table refers to the permanent tower footprint.

[‡] Elsewhere refers to construction roads that were reduced to two-track roads, or any areas where vegetation was cleared for Project construction that were subsequently revegetated during restoration (e.g., staging areas).

C.3 Quantifying Loss of Habitat Services Due to Indirect Disturbances during Construction

Indirect disturbances were simulated by applying buffers to the construction footprint and decreasing the habitat service scores below the baseline habitat service scores within the buffers. Because of uncertainties in the indirect impacts of transmission on greater sage-grouse, at this time, noise and human presence were the only indirect disturbance modeled in the HEA.

Use of construction equipment such as backhoes, cranes, front-end loaders, bulldozers, graders, excavators, compressors, generators, and various trucks would be needed for mobilizing crew, transportation and use of materials, line work, site clearing, and preparation during the construction phase of the GWS Project. Construction of and improvements to access roads would require use of earthmoving equipment such as bulldozers and graders. Table C.2 provides the typical noise levels for the construction equipment that could potentially be used during the construction phase of the GWS Project (ranging 80 to 90 A-weighted decibels [dBA] at 50 feet [15 m] from any work site) (Bureau of Land Management 2013).

Table C.5. Typical Noise Levels from Construction Equipment

Equipment Type	Noise Level at 50 feet (dBA)	Equipment Type	Noise Level at 50 feet (dBA)
Crane	88	Flatbed truck	88
Backhoe	85	Dump truck	88
Pan loader	87	Tractor	80
Bulldozer	89	Concrete truck	86
Fuel truck	88	Concrete pump	82
Water truck	88	Front end loader	83
Grader	85	Scraper	87
Roller	80	Air compressor	82
Mechanic truck	88	Average construction site	85

Noise during the construction phase of the GWS Project would be similar in magnitude to noise produced by vehicles using secondary roads (county highways, state highways, and heavily travelled gravel roads [e.g., access roads for oil and gas development, mining, etc.]). Passenger vehicles, medium trucks, and heavy trucks going 55 miles per hour produce typical noise levels of 72 to 74 dBA, 80 to 82 dBA, and 84 to 86 dBA, respectively, from a distance of 50 feet. Therefore, the noise disturbance associated with construction will be modeled as if the construction area was a secondary road (Table C.3).

In the model, buffers were placed around active construction areas in a manner that is identical to the methods used for secondary roads. The cells that fall within these buffers were scored in a manner identical to a secondary road (i.e., the score for VAR02 decreased).

Table C.6. Indirect Disturbance Levels Modeled by GWS Project Year and Disturbance Type

Project Milestones	**Project Year Applied in Wyoming and Colorado**	**Project Year Applied in Utah**	**Indirect Disturbance Buffers* Applied by Disturbance Type**		
			Series Compensation Stations	**Transmission Towers* (360 feet^2 of the pad)**	**New and Existing Access Roads, Helicopter Pads, Transmission Lines, Transmission Towers (remainder of pad), and Pulling/Tensioning Site**
Baseline	0	0	None	None	None
Construction	1, 2	1, 2, 3	Secondary Road*	Secondary Road	Secondary Road
Restoration	3	4	Secondary Road	None	None
Recovery 1	4	5	Secondary Road	None	None
Recovery 2	8	9	Secondary Road	None	None
Recovery 3	23	24	Secondary Road	None	None
Recovery 4	103	104	Secondary Road	None	None

* “Secondary Road” indicates that the footprint of the disturbance was classified as having the same indirect disturbance as a secondary road in the GIS model (Variable 2 in Table 1) and the scores of the surrounding vegetation decreased as defined by the habitat services metric.

C.4 Quantifying Habitat Services Losses During Restoration and Recovery

GWS Project-related habitat service losses are anticipated to decrease once construction is complete. Although still below baseline levels, the habitat service scores rise during restoration and recovery with vegetation regrowth (direct disturbances) and decreased levels of noise and human presence (indirect disturbances).

C.4.1 Restoration Milestone

For the restoration milestone, direct disturbances were defined as the loss of all habitat services in the construction footprint where vegetation clearing and ground disturbance occurs because the vegetation has not regrown sufficiently to provide habitat (Table C.1).

The indirect disturbance buffers that are applied to the series compensation stations during construction will remain during the restoration milestone and for the life of the GWS Project because of the noise and human activity associated with operation of the facility. No indirect disturbances were modeled for the rest of the GWS Project because little vehicle traffic or human presence is anticipated in these areas after construction of the line is complete.

C.4.2 Progressive Recovery Milestone

For the recovery milestone, direct disturbances were defined as the loss of all habitat services in a 360-square-foot footprint of the transmission structure pads and the partial loss of services in areas of vegetation regrowth (Table C.1). Indirect disturbances were applied in a manner identical to the construction milestone (Table C.3).

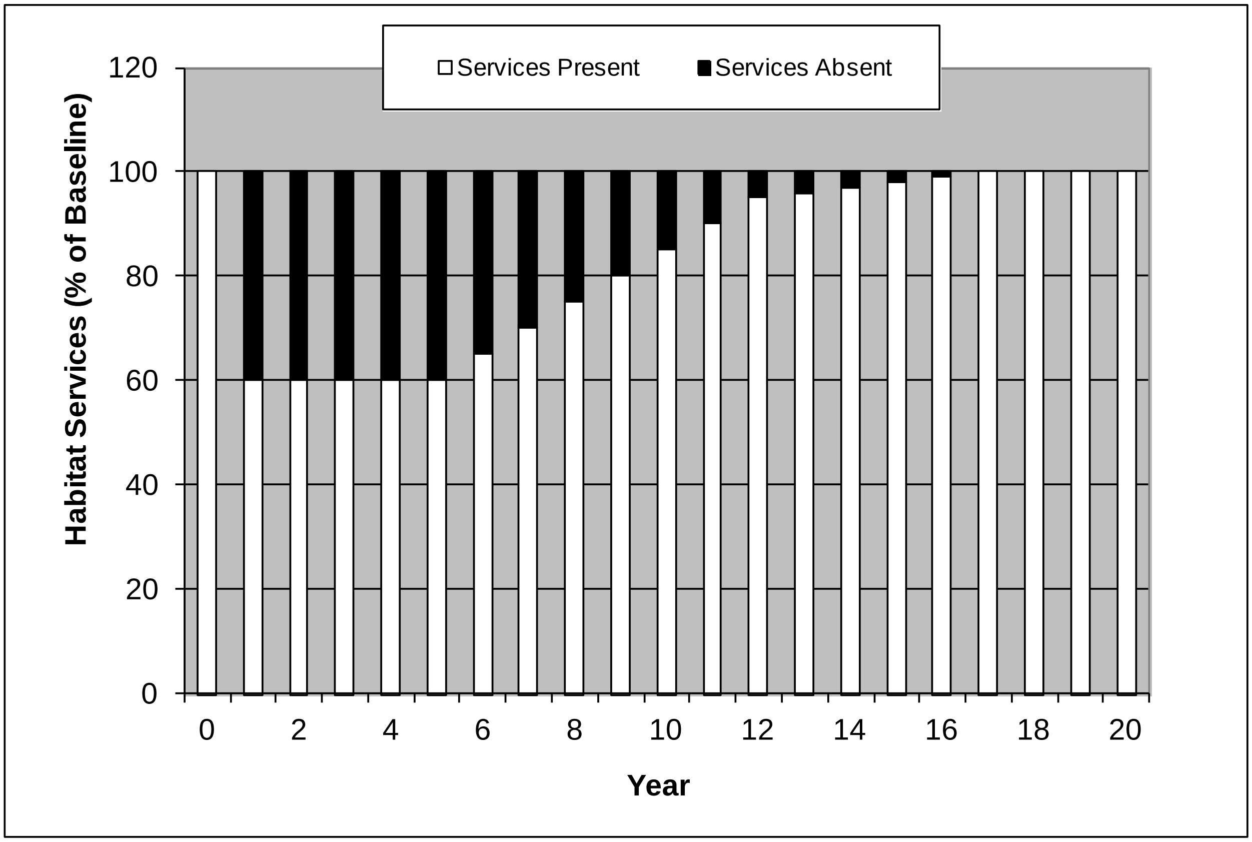
Habitat services in areas where the vegetation is reclaimed (i.e., outside the footprint of permanent facilities) will gradually return to baseline conditions at a rate dependent on the vegetation type. Services will return more rapidly for vegetation having rapid recovery rates (e.g., agriculture, wetland, grassland, or riparian) than for those with slower recovery times (e.g., shrub-dominated including sagebrush). Vegetation recovery curves were developed for the vegetation communities that are impacted by GWS Project activities.

To calculate the progressive return of services, the percentage of the baseline service value for a cell was calculated based on the appropriate vegetation recovery curve. For example, in those vegetation types with rapid restoration potential (agricultural areas, some grasslands, etc.), habitat services could be returned to 100% of baseline in the first year following construction. Those with longer recovery times may only achieve partial service returns per year until achieving their maximum value. For example, a vegetation community with a 50-year recovery period might achieve 10% value in year 5 after restoration, 20% in year 10, 30% in year 15, etc. until all services are returned in year 50.

C.4.3 HEA to Quantify Interim and Permanent Habitat Injuries

The approach described above produced a measure of habitat services (in service-acres) for each of the GWS Project milestones for each of the modeled project segments. The HEA is a stepwise model which quantifies the habitat injury separately in each year (Figure C.1). Each of the milestones was assigned to a calendar year. A linear change in habitat services was used to estimate annual service-acre increases between restoration and recovery and between the vegetation-specific recovery times.

The total number of service-acres lost per year was summed across the analysis period and expressed as service-acre-years. This value is the estimated sum of the interim and permanent losses to greater sage-grouse habitat that would occur as a result of the GWS project construction, operation, and maintenance.



Hypothetical example of how the HEA model considers habitat services absent and habitat services present in each year to calculate the total services lost over the Project period (i.e., sum of the black bars).

Figure C.1. HEA Model Calculation Example

The HEA model balances the cumulative injury (*I*, service-acre-years) over the lifetime of the GWS Project with the cumulative benefit of habitat restoration and mitigation (*R*, service-acre-years), so that the services returned by habitat restoration and mitigation are greater than or equal to the cumulative injury ($R \geq I$). The habitat injury (*I*, service-acre-years) was quantified for the life of the GWS Project using Equation 2. Equation 2 was adapted from Equation 8.1 in Allen et al. (2005). The discount rate (*r*) is anticipated to be set to 3%, which is standard for this type of analysis. The discount rate converts services being provided in different time periods into current time period equivalents (Allen et al. 2005). The discount rate effectively weighs the habitat service losses so that losses occurring early in the GWS Project result in a greater overall injury than losses occurring later in the project. Likewise, habitat restoration and mitigation occurring early in the GWS Project would result in a greater benefit than habitat restoration and mitigation occurring late in the project.

Equation C.3.

$$I = \sum_{t=1}^{y} (JV^{j} - JV^{t}) * \rho_{t}$$

where:

I is the present value of the service-acre-years lost over y due to interim and permanent injury;

t is the project year, with t= 1 being the year that GWS Project construction begins;

y is the analysis period, in years (e.g., 104);

JV^j is the value of the habitat services provided by the injured habitat (service-acres) before injury (i.e., at the Baseline milestone);

JV^t is the value of the habitat services provided by the injured habitat (service-acres) in year t; and

ρ_t is the discount factor, where $\rho_t = 1/(1+r)^{t-C}$, where r is the discount rate for the time period and C is the time the claim is presented (C = Project Year 1).

C.5 Literature Cited

Allen, P.D. II, D.J. Chapman, and D. Lane. 2005. Scaling environmental restoration to offset injury using habitat equivalency analysis. In *Economics and Ecological Risk Assessment: Applications to Watershed Management*, edited by R.F. Bruins and M.T. Heberling, pp. 165–184. Boca Raton, Florida: CRC Press.

Bureau of Land Management (BLM). 2014. *Draft Gateway South Transmission Project. Environmental Impact Statement*. BLM Wyoming State Office. February 21, 2014.

APPENDIX D

Quantification of Habitat Service Gains Produced by Habitat Restoration and Mitigation Measures

D. Modeling Mitigation Project Habitat Service Gains

Habitat restoration and conservation measures are intended to create new, or protect existing, greater sage-grouse (*Centrocercus urophasianus*) habitat services (Table D.1). These measures serve as a "toolbox" from which mitigation projects may be selected by Gateway South for inclusion in a mitigation package once the Bureau of Land Management has identified the preferred alternative and final habitat equivalency analysis (HEA) results are available for that alternative. The purpose of the mitigation projects is to offset the cumulative greater sage-grouse habitat service losses in the Assessment Area over the Gateway South Transmission Project (GWS Project) lifetime (i.e., I in Equation C.1). The HEA was used to evaluate the benefit of a sample of conservation measures in the Assessment Area.

Table D.7. Potential Habitat Restoration and Conservation Measures for Inclusion in the HEA

Mitigation Project Type	Brief Project Description	Anticipated Benefits	Average Cost of Implementation*,§
Fence removal and marking with flight diverters	Fences would be removed or marked in: 1) sections of fence known to cause greater sage-grouse collisions; 2) within 3 km (1.2 miles) of leks (Stevens et al. 2013) or other high risk areas; 3) in areas with low slope and terrain ruggedness (Stevens 2011); and 4) where segments are bounded by steel t-posts with spans greater than 4 m (Stevens 2011).	- Reduce mortality due to greater sage-grouse collisions - Increase visibility of fences, where diverters are used - Increase contiguous patches of shrub-steppe habitat - Remove localized grazing pressure where fences are removed, thereby increasing local habitat quality (e.g., bunchgrass cover)	$1,485 per mile ($920 per km) for fence removal or initial installation of flight diverters, and $320 per mile per year ($200 per km per year) for maintenance on flight diverters†
Sagebrush restoration and improvement projects	Seeding, planting seedlings, or transplanting containerized sagebrush plants (one plant per 5 m^2)	- Create contiguous patches of shrub-steppe habitat with optimal sagebrush cover and height - Increase availability of high-quality nesting, brood rearing, and winter habitats	$3,975 to $7,320 per acre ($9,820 to $18,090 per hectare) depending on method used ^
Juniper/conifer removal	Mechanical removal (lop and scatter, cut-pile-cover, or mastication) of juniper/confer adjacent to areas with optimal sagebrush cover and height.	- Reverse juniper/conifer encroachment on shrub-steppe habitat to increase contiguous patches of greater sage-grouse habitat - Increase light penetration to support a forb and grass understory	$180 to $2,120 per acre ($445 to $5,240 per hectare) depending on density of vegetation removed ‡
Conservation easements	Removes threat of specific land uses to sensitive wildlife populations.	- Prevent greater sage-grouse habitat destruction or degradation near urban areas and oil and gas development - Reduce future fragmentation of shrub-steppe habitat	$615 per acre ($1,515 per hectare) average purchase price $2,650 per year for each easement for maintenance and monitoring

* Cost of implementation includes a 50% markup for indirect costs, which include contract writing, supervision, clearances, monitoring, inspections, and vehicle costs.

† The cost of maintenance for the lifetime of the Project is included in the HEA model and the resulting estimated cost per service-acre-year.

‡ The cost of this treatment varies widely depending on the baseline vegetation. The lower end cost includes lop and scatter of Phase I juniper with no understory treatment. The upper end cost includes mastication of Phase III juniper and seeding a bunchgrass understory.

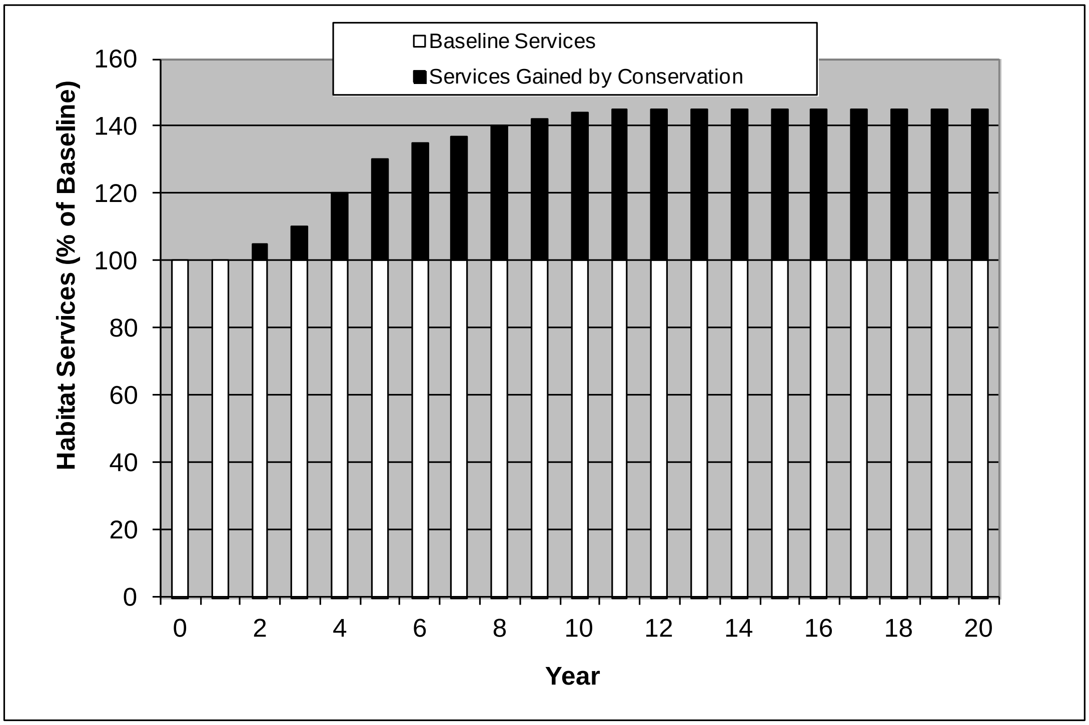
§ Costs were estimated for the Gateway West Transmission Line HEA (BLM 2013) and then adjusted using a 3% inflation rate to bring them up to 2014 dollars. Mitigation funds provided in years after 2014 should be further adjusted for inflation.

^ Cost estimates include seeding a bunchgrass understory, although the benefit of a bunchgrass understory could not be measured by the HEA metric.

km = kilometer m = meter

D.1 GIS Modeling of Conservation Benefits

The analysis of habitat service benefits produced by each habitat restoration or mitigation measure in Table D.1 was completed using an approach similar to that described for quantifying habitat losses. It is necessary that both analyses (i.e., quantification of habitat service losses and habitat service gains) use the same habitat services metric (see Appendix A), the same unit of measure (service-acres and service-acre-years), the same analysis period, and the same discount rate. Figure D.1 illustrates a hypothetical example of how mitigation was added to the baseline service metric over time to derive an estimate of the service-acre-years provided by the mitigation measures that were modeled for the GWS Project.



Hypothetical example of how the HEA model considers habitat services gained by habitat restoration and mitigation to calculate the total services gained over the project period (i.e., sum of the black bars).

Figure D.2. HEA services gained example

D.1.1 Modeling Habitat Restoration and Mitigation Measures

Hypothetical habitat restoration and mitigation project areas were used to estimate average habitat service gain. Once beneficial locations for these projects were identified, variable scores in the HEA model were changed to approximate the change in habitat services expected with implementation of the measure (Table D.2). The new habitat service score was calculated for each cell in the Assessment Area using the same habitat services metric used to quantify baseline and impacts (see Appendix A). The habitat service benefit of a modeled mitigation project was calculated by determining the difference in the habitat services provided at baseline and after implementation of the habitat restoration or mitigation measure. For each habitat restoration/mitigation project type, the assumed time to full benefit and project initiation timing are provided in Table D.3. A linear increase in services was assumed between project initiation and time of full benefit.

Table D.8. Site Selection and Changes in Metric Scoring Applied During GIS Analysis of Conservation Measure Benefit

Type of Improvement	Site Selection Criteria	Changes in Metric Scoring	Analysis Product
Fence removal and marking with reflectors	Priority areas for fence removal and/or marking are as follows: 1) sections of fence known to cause greater sage-grouse collisions; 2) within 2 km (1.2 miles) of leks (Stevens et al. 2013) or other high risk areas; 3) in areas with low slope and terrain ruggedness (Stevens 2011); and where segments are bounded by steel t-posts with spans greater than 4 m (Stevens 2011).	Remove fence score adjustment for a known length of high priority fences in the analysis area*	Analysis provided the services gained, the analysis area, and the kilometers of fences marked and removed in the analysis area.
Sagebrush restoration and improvement projects	Smaller patches of agriculture or surface disturbance (i.e., well pads) surrounded by sagebrush habitat.	• Make it a modeled habitat type • Change Sagebrush Abundance Index score as appropriate • Change Sagebrush Canopy Cover score to 3 • Change the Sagebrush Canopy Height to 3 • Change the scores of the surrounding cells for Distance of Habitat to Sage or Shrub Dominant	Analysis provided the services gained, the area of the analysis, and the area of the habitat improvement (i.e., the agricultural field or well pad)
Juniper/conifer removal	Phase I Juniper (a sagebrush-dominated landscape with scattered juniper) adjacent to sagebrush	• Make it a modeled habitat type • Change Sagebrush Abundance Index score as appropriate • Change Sagebrush Canopy Cover score to average score of local sagebrush vegetation • Change the Sagebrush Canopy Height score to average score of local sagebrush vegetation • Change the scores of the surrounding cells for Distance of Habitat to Sage or Shrub Dominant	Analysis provided the services gained, the total analysis area, and the acres of juniper removed.

Type of Improvement	Site Selection Criteria	Changes in Metric Scoring	Analysis Product
	Phase II Juniper (50:50 mix sagebrush and juniper) adjacent to sagebrush	• Make it a modeled habitat type • Change Sagebrush Abundance Index score as appropriate • Change Sagebrush Canopy Cover score to average score of local sagebrush vegetation • Change the Sagebrush Canopy Height score to average score of local sagebrush vegetation • Change the scores of the surrounding cells for Distance of Habitat to Sage or Shrub Dominant	Analysis provided the services gained, the total analysis area, and the acres of juniper removed.
	Phase III Juniper (a juniper-dominated landscape) adjacent to sagebrush	• Make it a modeled habitat type • Change Sagebrush Abundance Index score as appropriate • Change Sagebrush Canopy Cover score to average score of local sagebrush vegetation • Change the Sagebrush Canopy Height score to average score of local sagebrush vegetation • Change the scores of the surrounding cells for Distance of Habitat to Sage or Shrub Dominant	Analysis provided the services gained, the total analysis area, and the acres of juniper removed.
Conservation easements	Areas with average habitat service scores within sage-grouse priority general habitat (PGH)	No change to metric score. Calculate average habitat service score within PGH at baseline.	Analysis provided the average baseline services per acre present in PGH in the analysis area

* Although fence removal is more effective at removing the threat of sage-grouse collision than fence marking, both measures were modeled the same for the HEA

Table D.9. Time to Project Implementation and Time to Full Benefit of Project Used in HEAs of Conservation Measures

Type of Improvement	Year of Implementation Assuming Funding at Project Initiation	Time to Full Benefit of Project After Implementation
Fence removal and marking with reflectors	Year 1	Immediate full benefit
Sagebrush restoration and improvement projects	Year 3	Seeding sagebrush and bunchgrass understory: 100 years to full benefit (assume linear increase in services)*
	Year 5	Transplanting containerized stems and seeding bunchgrass understory: 15 years to full benefit (assume linear increase in services)
	Year 3	Planting seedlings and seeding bunchgrass understory: 90 years to full benefit (assume linear increase in services)
Juniper/conifer removal	Year 3	Lop and Scatter Phase I Juniper: 20 years to full benefit (assume linear increase in services)
	Year 3	Cut-Pile-Cover or Mastication of Phase II Juniper: 50 years to full benefit (assume linear increase in services)
	Year 3	Mastication of Phase III Juniper plus bunchgrass seeding: 100 years to full benefit (assume linear increase in services)
Conservation easements	Year 2	Immediate full benefit once established

* Time to sagebrush establishment is based on passive restoration rates. Rates of establishment are expected to be higher for this active restoration, but the longer time is used in the analysis to offset potential restoration project failures.

The present value habitat service gain (R, service-acre-years) was quantified for the life of the GWS Project using Equation D.1 (adapted from Equation 8.1 in Allen et al. 2005).

Equation D.4.

$$R = \sum_{t=1}^{y} (PV^{t} - PV^{p}) * \rho_{t}$$

where:

R is the present value of the service-acre-years gained by the habitat restoration or mitigation measure;

t = 1 is the year the transmission line GWS Project begins;

y is the analysis period, in years (i.e., 104);

PV^{p} is the value of the habitat services provided by the improved habitat (service-acres) before habitat restoration or mitigation measure (i.e., at the Baseline milestone);

PV^{t} is the value of the habitat services provided by the improved habitat (service-acres) in year t; and

ρ_t is the discount factor, where $\rho_t = 1/(1+r)^{t-C}$, where r is the discount rate for the time period and C is the time the claim is presented (C = Project Year 1).

The present value habitat service gain (R) was standardized among mitigation project types by dividing by size of mitigation project (units in acres or linear mile depending on the conservation measure modeled) and averaged among hypothetical projects applying the same conservation measure to produce the service-years gained per unit of treatment ($\overline{R}^{m}$). This value was used in mitigation calculations.

D.2 Estimating Cost to Implement Modeled Habitat Restoration and Mitigation Measures

The cost of the modeled habitat conservation measures was estimated by adjusting the cost estimates from the Gateway West HEA by 3% annually from 2012 to 2014 to account for inflation. The Gateway West HEA averaged the known cost of similar mitigation projects previously implemented (in current year U.S. dollars). The cost per unit treated was divided by the average service-acre-years gained per unit area treated (calculated for the GWS Project in the previous section), to estimate the price per service-acre-year gained for each of the habitat restoration and mitigation measures. This is the currency that will be used to offset the permanent and interim habitat service losses associated with the GWS Project's construction, operation, and maintenance for the lifetime of the GWS Project.

D.3 Approach to Offset Habitat Service Losses with Habitat Service Gains

An HEA scales the mitigation package (i.e., funding to create habitat services) to offset the loss of habitat services over the lifetime of the GWS Project. The injury is offset by planned habitat restoration and mitigation projects in Equation D.2, where the mitigation project size (P^m) can be solved for each habitat restoration or mitigation measure type (m).

Equation D.5.

$$I = \sum_{m1}^{i} P^m * \overline{R}^m$$

where:

I is the present value of the service-acre-years lost over y due to interim and permanent injury;

i is the number of habitat restoration and mitigation measures modeled;

Pm is the size of the habitat restoration or mitigation project of type m (in units of acres or miles); and

$\overline{R}^m$ is mean service-years gained per unit (acres or miles) of treatment.

Once the P^m is defined for each habitat improvement and mitigation measure, the costs per unit can be applied. Mitigation due is the sum of the costs to implement each of the habitat improvement and mitigation projects needed to offset the GWS Project.

D.4 Literature Cited

Allen, P.D. II, D.J. Chapman, and D. Lane. 2005. Scaling environmental restoration to offset injury using habitat equivalency analysis. In *Economics and Ecological Risk Assessment: Applications to Watershed Management*, edited by R.F. Bruins and M.T. Heberling, pp. 165–184. Boca Raton, Florida: CRC Press.

Bureau of Land Management (BLM). 2013. *Gateway South Transmission Project. Draft Environmental Impact Statement*. BLM Wyoming State Office and Western Area Power Administration. June 2013.

Stevens, B. 2011. Impacts of fences on greater sage-grouse in Idaho: collision, mitigation, and spatial ecology. M.S. thesis, University of Idaho, Moscow.

APPENDIX E

Assignment of National Gap Analysis Program (GAP) Vegetation Classifications to Categories for HEA Modeling

E. Vegetation Categorization for HEA Modeling

Vegetation and other landcover types in the U.S. Geological Survey national Gap Analysis Program (GAP) Land Cover Dataset were classified as providing habitat for greater sage-grouse (*Centrocercus urophasianus*) or not providing habitat for greater sage-grouse. Vegetation types providing no habitat services to greater sage-grouse (Non-Habitat in Table E.1) were assumed to require no mitigation in the habitat equivalency analysis (HEA). Those vegetation types that are used by greater sage-grouse (Table E.1) were assigned to one of four modeled vegetation categories. Each of the modeled vegetation categories had a different vegetation recovery time in the HEA model.

Table E.10. Vegetation Categorization Based on GAP Landcover Types

Vegetation Categories	GAP Vegetation: ECOLSYS_LU
Non-Habitat: Anthropogenic Disturbance and Open Water	Developed, High Intensity
	Developed, Low Intensity
	Developed, Medium Intensity
	Developed, Open Space
	Disturbed/Successional - Recently Chained Pinyon-Juniper
	Open Water (Fresh)
	Quarries, Mines, Gravel Pits and Oil Wells
Non-Habitat: Natural Vegetation	Colorado Plateau Mixed Bedrock Canyon and Tableland
	Colorado Plateau Pinyon-Juniper Shrubland
	Colorado Plateau Pinyon-Juniper Woodland
	Great Basin Pinyon-Juniper Woodland
	Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland
	Inter-Mountain Basins Cliff and Canyon
	Inter-Mountain Basins Juniper Savanna
	Inter-Mountain Basins Shale Badland
	Introduced Riparian and Wetland Vegetation
	Introduced Upland Vegetation - Annual Grassland
	Introduced Upland Vegetation - Perennial Grassland and Forbland
	Introduced Upland Vegetation - Treed
	North American Warm Desert Bedrock Cliff and Outcrop
	North American Warm Desert Lower Montane Riparian Woodland and Shrubland
	Recently Burned
	Rocky Mountain Alpine Bedrock and Scree
	Rocky Mountain Aspen Forest and Woodland
	Rocky Mountain Bigtooth Maple Ravine Woodland
	Rocky Mountain Cliff, Canyon and Massive Bedrock
	Rocky Mountain Foothill Limber Pine-Juniper Woodland

Vegetation Categories	GAP Vegetation: ECOLSYS_LU
	Rocky Mountain Gambel Oak-Mixed Montane Shrubland
	Rocky Mountain Lodgepole Pine Forest
	Rocky Mountain Lower Montane Riparian Woodland and Shrubland
	Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland
	Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland
	Rocky Mountain Subalpine-Montane Limber-Bristlecone Pine Woodland
	Southern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Woodland
	Southern Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland
	Western Great Plains Cliff and Outcrop
Habitat: Agriculture and Wetland (HEA assumed 1 year recovery time)	Cultivated Cropland
	Inter-Mountain Basins Playa
	North American Arid West Emergent Marsh
	North American Warm Desert Playa
	Pasture/Hay
	Rocky Mountain Alpine-Montane Wet Meadow
	Rocky Mountain Subalpine-Montane Mesic Meadow
	Western Great Plains Closed Depression Wetland
	Western Great Plains Open Freshwater Depression Wetland
	Western Great Plains Saline Depression Wetland
Habitat: Grassland and Riparian (HEA assumed 5 years recovery time)	Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland
	Inter-Mountain Basins Semi-Desert Grassland
	North American Warm Desert Riparian Mesquite Bosque
	North American Warm Desert Wash
	Northwestern Great Plains Mixedgrass Prairie
	Rocky Mountain Subalpine-Montane Riparian Shrubland
	Southern Rocky Mountain Montane-Subalpine Grassland
	Western Great Plains Riparian Woodland and Shrubland
Habitat: Sagebrush (HEA assumed 20 years recovery time)	Colorado Plateau Mixed Low Sagebrush Shrubland
	Great Basin Xeric Mixed Sagebrush Shrubland
	Inter-Mountain Basins Big Sagebrush Shrubland
	Inter-Mountain Basins Big Sagebrush Steppe
	Inter-Mountain Basins Montane Sagebrush Steppe
Habitat: Shrub Steppe (HEA assumed 100 years recovery time)	Great Basin Semi-Desert Chaparral
	Inter-Mountain Basins Active and Stabilized Dune

Vegetation Categories	GAP Vegetation: ECOLSYS_LU
	Inter-Mountain Basins Curl-leaf Mountain Mahogany Woodland and Shrubland
	Inter-Mountain Basins Greasewood Flat
	Inter-Mountain Basins Mat Saltbush Shrubland
	Inter-Mountain Basins Mixed Salt Desert Scrub
	Inter-Mountain Basins Semi-Desert Shrub Steppe
	Mogollon Chaparral
	Mojave Mid-Elevation Mixed Desert Scrub
	Rocky Mountain Lower Montane-Foothill Shrubland
	Sonora-Mojave Creosotebush-White Bursage Desert Scrub
	Sonora-Mojave Mixed Salt Desert Scrub
	Wyoming Basins Dwarf Sagebrush Shrubland and Steppe

APPENDIX F

Specific Conservation Objectives and Measures Identified in the Conservation Objectives Report (COR)

F. Specific Conservation Objectives and Measures Identified in the Conservation Objectives Report

In February 2013, the U.S. Fish and Wildlife Service (USFWS) issued a Conservation Objectives Report (COR) (USFWS 2013) that details the finding of a Conservation Objectives Team (COT) that was convened and asked to develop and recommend the degree and types of threats that would need to reduced or eliminated in order to conserve the greater sage-grouse (*Centrocercus urophasianus*) from being in danger of extinction and to prevent the likeliness of the sage-grouse becoming in danger of extinction in the foreseeable future. The specific conservation objectives and measures identified in the Conservation Objectives Report (COR) are provided in the following sections.

F.1 Priority Areas for Conservation

Priority areas for conservation (PACs) are key areas (not populations) across the landscapes that are necessary to maintain redundant, representative, and resilient populations. The PACs were developed by identifying key areas across the landscape that is necessary to maintain redundant, representative, and resilient populations. Existing mapping that state's had already gathered concerning the location of sage-grouse habitat was used to identify the areas that would be needed to maintain sage-grouse representation, redundancy, and resilience across the landscape. This mapping, in general, used lek counts, telemetry, nesting areas, known distribution, sightings/observations, and habitat distribution to identify their respective PACs.

Maintenance of the integrity of PACs is the essential foundation for sage-grouse conservation. Incorporation of objectives into conservation planning efforts, including rigorous monitoring plans, will help provide the assurance that the long-term population trend objectives are likely to be attained.

Conservation of sage-grouse habitats outside of PACs are important as they provide connectivity between PACs and should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur.

The following objectives are targeted at conserving PACs, but can be applied to sage-grouse habitats outside of PACs. These objectives apply to both the Bi-State distinct population segments (DPS) and sage-grouse range-wide. Achieving these objectives will conserve redundancy and representation of the species and its habitats across its range.

1. Retain sage-grouse habitats within PACs.
2. If PACs are lost to catastrophic events, implement appropriate restoration efforts.
3. Restore and rehabilitate degraded sage-grouse habitats in PACs.
4. Identify areas and habitats outside of PACs which may be necessary to maintain the viability of sage-grouse.
5. Re-evaluate the status of PACs and adjacent sage-grouse habitat at least once every 5 years, or when important new information becomes available.
6. Actively pursue opportunities to increase occupancy and connectivity between PACs.
7. Maintain or improve existing habitat conditions in areas adjacent to burned habitat. In the late summer of 2012, several large wildfires in the Great Basin burned through sage-grouse habitats, including PACs.

F.2 Identifying Sage-Grouse Population Threats

The following 14 sage-grouse and sage-grouse habitat threats are identified in the COR.

1. Fire
2. Non-native, Invasive Plant Species
3. Energy Development
4. Sagebrush Removal
5. Grazing
6. Range Management Structures
7. Free-Roaming Equid Management
8. Pinyon-Juniper Expansion
9. Agricultural Conversion
10. Mining
11. Recreation
12. Ex-Urban Development
13. Infrastructure
14. Fences

A discussion of each threat, including the conservation objectives, measures, and options, is provided below.

1. Fire

Conservation Objective

> Retain and restore healthy native sagebrush plant communities within the range of sage-grouse by replacing the invasive annuals with native perennial bunchgrass communities both within and outside of PACs.

Conservation Measures

1. Restrict or contain fire within the normal range of fire activity.
2. Eliminate intentional fires in sagebrush habitats.
3. Design and implement restoration of burned sagebrush habitats to allow for natural succession to healthy native sagebrush plant communities that result in returning or increasing sage-grouse populations within the burned areas.
4. Implement monitoring programs for restoration activities and their completeness.
5. Immediately suppress fire in all sagebrush habitats.

Conservation Options

1. Prevention of fires in sage-grouse habitats.
2. Quickly suppress fires that do occur.
3. Improve restoration support.
4. Renew and implement Bureau of Land Management (BLM) Instructional Memorandum (IM) 2011-138 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management; BLM 2011) until a decision is made on whether to incorporate the measures identified in the IM into Resource Management Plans.

2. Non-native, Invasive Plant Species

Conservation Objective

Maintain and restore healthy, native sagebrush plant communities.

Conservation Measures

1. Retain all remaining large intact sagebrush patches particularly at low elevations.
2. Reduce or eliminate disturbances that promote the spread of these invasive species.
3. Monitor and control invasive vegetation post-wildfire for at least 3 years.
4. Require best management practices for construction projects in and adjacent to sagebrush habitats to prevent invasion.
5. Restore altered ecosystems so that non-native invasive plants are reduced to levels that do not put the area at risk of conversion if a catastrophic event were to occur.

3. Energy Development

Conservation Objective

Energy development should be designed to ensure that it will not impinge upon stable or increasing sage-grouse population trends.

Where state sage-grouse management plans have already identified an effective strategy for energy development that meets the above objective, the strategies in those plans should be implemented. In all other situations, the following measures should be considered to avoid, reduce, or mitigate impacts from energy development.

Conservation Measures

1. Avoid energy development in PACs.
2. If avoidance is not possible within PACs, development should only occur in non-habitat areas.
3. If development must occur in sage-grouse habitats the development should occur in the least suitable habitat for sage-grouse and be designed to ensure that there are no detectable declines in population trends by using the following.
    a. Reduce and maintain the density of energy structures below which there are not impacts to the function of the sage-grouse habitats or do not result in declines in sage-grouse populations within PACs.
    b. Design development outside PACs.
    c. Consolidate structures and infrastructure associated with energy development.
    d. Reclamation of disturbance resulting from a proposed project should only be considered as mitigation for those impacts.
    e. Design development to minimize tall structures or other features associated with the development.

4. Sagebrush Removal

Conservation Objective

Avoid sagebrush removal or manipulation in sage-grouse breeding or wintering habitats. Exceptions to this can be considered where minor habitat losses are sustained while implementing other habitat improvement or maintenance efforts (e.g., juniper removal) and in areas used as late summer brood habitat.

5. Grazing

Conservation Objective

Conduct grazing management for all ungulates that is consistent with the local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and/or conserves the essential habitat components for sage-grouse. Areas which do not currently meet this standard should be managed to restore these components. In addition, adequate monitoring of grazing strategies and their results is essential to ensuring that desired results are achieved.

Achieving the above objective will require the development of long-term strategies that provide seasonal habitats for sage-grouse. Although grazing management should initially focus on retaining the above habitat conditions within PACs, sound grazing management should be applied across all sagebrush habitats. There are several potentially useful tools for developing management strategy metrics, such as Ecological Site Descriptions (ESDs) and Proper Functioning Conditions (PFC) for riparian areas, or Rangeland Health Standards (RHS) for uplands. However, use of these tools must be tied to sage-grouse habitat and population parameters if they are to be considered as a sole measure for monitoring condition and, if appropriate, rehabilitation progress.

Conservation Options

1. Ensure that allotments meet ecological potential and wildlife habitat requirements and ensure that the native perennial grass community is consistent with the ecological site.
2. Inform and educate affected grazing permittees regarding sage-grouse habitat needs and conservation measures.
3. Incorporate sage-grouse habitat needs or habitat characteristics into relevant resource and allotment management plans
4. Conduct habitat assessments and determine factors causing any failure to achieve the habitat characteristics.
5. Priority should be given to PACs and then sage-grouse habitats adjacent to PACs.

6. Range Management Structures

Conservation Objective

Avoid or reduce the impact of range management structures on sage-grouse. Typical range management structures include fences, water developments, and mineral licks.

Conservation Measures

1. Range management structures should be designed and placed to be neutral or beneficial to sage-grouse.
2. Structures that are currently contributing to negative impacts to either sage-grouse or their habitats should be removed or modified.

7. Free-Roaming Equid Management

Conservation Objective

Protect sage-grouse from the negative influences of grazing by free-roaming equids.

Conservation Measures

1. Develop, implement, and enforce adequate regulatory mechanisms to protect sage-grouse.
2. Manage free-roaming equids at levels that allow native sagebrush vegetative communities to minimally achieve PFC (for riparian areas) or RHS (for uplands).

Conservation Options

1. Determine if the current appropriate management levels maintain suitable sage-grouse habitat parameters and support additional research to quantitatively determine impacts of wild horses and burros on sage-grouse habitat parameters.
2. Until research is completed, manage for appropriate management levels within horse management areas on federal lands.
3. Develop scientific procedures that can be replicated to count horses.
4. Develop a sound monitoring program with prescriptive management indicators to make adjustments in horse and burro numbers or their distribution.

8. Pinyon-Juniper Expansion

Conservation Objective

Remove pinyon-juniper from areas of sagebrush that are most likely to support sage-grouse (post-removal) at a rate that is at least equal to the rate of pinyon-juniper incursion. Pinyon and/or juniper removal activities should focus initially on areas within PACs, but all opportunities to remove this threat should be considered if resources are available.

Conservation Options

1. Prioritize the use of mechanical treatments for removing pinyon and/or juniper.
2. Use caution when planning use of prescribed fire in high-elevation mountain big sage sites to prevent fire escape and any subsequent establishment of invasive annual grasses or other weeds.
3. Reduce juniper cover in sage-grouse habitats to less than 5%.
4. Employ all necessary management actions to maintain the benefit of pinyon and/or juniper removal for sage-grouse habitats.

9. Agricultural Conversion

Conservation Objective

Avoid further loss of sagebrush habitat for agricultural activities and prioritize restoration. In areas where taking agricultural lands out of production has benefited sage-grouse, the programs supporting these actions should be targeted and continued. Threat amelioration activities should be prioritized within PACs but should also be considered in all sage-grouse habitats.

Conservation Options

1. Revise Farm Bill policies and commodity programs that facilitate ongoing conversion of native habitats to marginal croplands to support conservation of remaining sagebrush-steppe habitats.
2. Continue and expand incentive programs that encourage the maintenance of sagebrush habitats.
3. Develop criteria for set-aside programs which stop negative habitat impacts and promote the quality and quantity sage-grouse habitat.
4. If lands that provide seasonal habitats for sage-grouse are taken out of a voluntary program precautions should be taken to ensure withdrawal of the lands that minimize the risk of direct take of sage-grouse.

10. Mining

Conservation Objective

Maintain stable to increasing sage-grouse populations and no net loss of sage-grouse habitats in areas affected by mining. Reclamation of mined lands within sage-grouse habitats should be focused on restoring habitats usable by sage-grouse, and the re-establishment of sage-grouse in these areas.

Conservation Options

1. Avoid new mining activities and/or any associated facilities within occupied habitats.
2. Avoid leasing in sage-grouse habitats until other suitable habitats can be restored.
3. Reclamation plans should focus on restoring areas disturbed by mining and associated facilities to healthy sagebrush ecosystems.
4. Reclamation of abandoned mine lands should focus on restoring areas to healthy sagebrush ecosystems.

11. Recreation

Conservation Objective

In areas subjected to recreational activities, maintain healthy native sagebrush communities based on local ecological conditions and with consideration of drought conditions and manage direct and indirect human disturbance (including noise) to avoid interruption of normal sage-grouse behavior. Threat amelioration for recreation should be implemented in PACs and considered in all other sage-grouse habitats.

Conservation Options

1. Close important sage-grouse use areas to off-road vehicle use.
2. Avoid development of recreational facilities in sage-grouse habitats.

12. Ex-Urban Development

Conservation Objective

Limit urban and exurban (disperse home on small acreages) development in sage-grouse habitats and maintain intact native sagebrush plant communities. At a minimum, threat amelioration for ex-urban development should occur within PACs and should also be considered in all sage-grouse habitats. In all other situations the following conservation options should be considered.

Conservation Options

1. Provide incentives to maintaining large tracts of private lands that provide habitat for sage-grouse. These incentives can include developing habitat conservation plans; conservation easements or leases; and/or land swaps.
2. Acquire and manage sage-grouse habitat to maintain intact ecosystems.
3. Consolidate infrastructure that supports urban and ex-urban development.
4. Do not allow landfills within sage-grouse habitats or within 5 kilometers of sage-grouse habitats.
5. Do not relinquish public lands for the purpose of urban development in sage-grouse habitat.

13. Infrastructure

Conservation Objective

Avoid development of infrastructure (roads, pipelines, power lines, cellular towers, etc.) within PACs.

Conservation Measures

There should be no new development of infrastructure corridors within PACs. Designated, but not yet developed infrastructure corridors should be re-located outside of PACs unless it can be demonstrated that these corridors will have no impacts on the maintenance of neutral or positive sage-grouse population trends and habitats.

Conservation Options

1. Avoid construction in sage-grouse habitat.
2. Power transmission corridors which cannot avoid PACs should be buried (if technically feasible) and disturbed habitat should be restored and/or preclude development of new structures within locally important sage-grouse habitats. If avoidance is not possible and consolidate new structures with existing features keeping corridors to 200 meters in width or less. Habitat function lost from placement of infrastructure should be replaced.
3. Infrastructure corridors should be designed and maintained to preclude introduction of invasive plant species.
4. Restrictions limiting use of roads should be enforced.
5. Remove transmission lines and roads that are duplicative or are not functional.
6. Transmission line towers should be constructed to severely reduce or eliminate nesting and perching by avian predators.
7. Avoid installation of compressor stations in sage-grouse habitats where the sage-grouse would be affected by noise and operation activities.
8. All commercial pipelines should be buried and habitat that is disturbed needs to be reclaimed with emphasis placed on suppression of non-native invasive plant species.
9. Mitigate impacts to habitat from development of these features.
10. Remove (or decommission) non-designated roads within sagebrush habitats.

14. Fences

Conservation Objective

Minimize the impact of fences on sage-grouse populations.

Conservation Options

1. Mark fences that are in high risk areas for collision with permanent flagging or other suitable device to reduce sage-grouse collisions located within 2 kilometers of occupied leks.
2. Identify and remove unnecessary fences.
3. Placement of new fences and livestock management facilities should consider their impact on sage-grouse and be placed at least 1 kilometer from occupied leks.

F.3 Literature Cited

U.S. Fish and Wildlife Service (USFWS). 2013. *Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report*. U.S. Fish and Wildlife Service, Denver, CO. February 2013.

Appendix L
Grazing Allotment Supporting Data

APPENDIX L – GRAZING ALLOTMENT SUPPORTING DATA

L.1 Introduction

Tables L-1, L-2, and L-3 are lists of the grazing allotments crossed by each alternative route for each state. Table L-4 is a list of the grazing allotments crossed by the 345-kilovolt transmission lines between the Clover and Mona Substations. Table L-5 is a list of the grazing allotments crossed by all route variations. This information supports the land use resource inventories and impact assessment. The inventories and analysis are included in the Final Environmental Impact Statement and Proposed Land-use Plan Amendments for the Energy Gateway South Transmission Project Section 3.2.11.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Alternative WYCO-B (Agency and Applicant Preferred Alternative)						
Chace Block	BLM Rawlins Field Office	66,021	3.1	34	14	0.0
Continental	BLM Rawlins Field Office	25,721	5.3	59	24	0.0
Daley Ranch	BLM Rawlins Field Office	26,194	4.1	46	19	0.0
Dana Block North	BLM Rawlins Field Office	70,239	15.2	169	70	0.0
Doty Mountain	BLM Rawlins Field Office	85,966	3.3	37	15	0.0
Echo Springs	BLM Rawlins Field Office	45,517	5.9	66	27	0.0
Ellis Block	BLM Rawlins Field Office	16,307	0.4	4	2	0.0
Ft. Steele Breaks	BLM Rawlins Field Office	20,569	2.0	22	9	0.0
Lazy Y S Ranch	BLM Rawlins Field Office	17,849	4.5	50	21	0.0
Medicine Bow	BLM Rawlins Field Office	8,641	2.0	23	9	0.0
Mexican Graves	BLM Rawlins Field Office	20,257	3.8	42	17	0.0
Pass Creek Ridge	BLM Rawlins Field Office	59,770	7.1	79	33	0.0
Pine Grove/Bolten	BLM Rawlins Field Office	282,920	20.6	229	95	0.0
Powder Rim Rotation	BLM Rawlins Field Office	47,004	11.1	123	51	0.0
Quealey Block	BLM Rawlins Field Office	56,145	4.0	44	18	0.0
Riner	BLM Rawlins Field Office	56,011	10.7	119	49	0.0
Rotten Springs	BLM Rawlins Field Office	21,139	1.3	14	6	0.0
Sand Creek	BLM Rawlins Field Office	30,033	6.9	77	32	0.0
Sixteen Mile	BLM Rawlins Field Office	81,857	10.9	121	50	0.0
South Barrel	BLM Rawlins Field Office	10,301	3.2	36	15	0.0
South Laclede	BLM Rawlins Field Office	52,957	7.8	87	36	0.0
South Wamsutter	BLM Rawlins Field Office	31,410	7.3	81	34	0.0
Cedar Springs Draw	BLM Little Snake Field Office	35,489	7.9	88	36	0.0
East Powder Wash	BLM Little Snake Field Office	27,154	2.5	28	12	0.0
Grounds	BLM Little Snake Field Office	8,012	2.1	23	10	0.0
Horse Draw	BLM Little Snake Field Office	7,414	2.0	22	9	0.0
Nipple Peak	BLM Little Snake Field Office	15,560	4.9	54	23	0.0
Powder Wash	BLM Little Snake Field Office	27,432	2.5	28	12	0.0
Sand Wash	BLM Little Snake Field Office	76,108	2.4	27	11	0.0
Sheepherder Spring	BLM Little Snake Field Office	86,354	4.6	51	21	0.0
Snake River	BLM Little Snake Field Office	62,469	9.9	109	45	0.0
West Wapiti Peak	BLM Little Snake Field Office	10,411	3.4	38	16	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Elk Springs	BLM White River Field Office	26,620	8.2	91	38	0.0
Horse Draw	BLM White River Field Office	17,761	6.6	73	30	0.0
Massadona	BLM White River Field Office	10,871	1.0	11	5	0.0
BLM Total		**1,544,415**	**198.4**	**2,202**	**913**	**0.0**
	Wyoming State Lands	638	1.0	11	5	0.0
	Wyoming State Lands	160	0.3	3	1	0.0
	Wyoming State Lands	632	0.2	2	1	0.0
	Wyoming State Lands	637	1.0	11	5	0.0
	Wyoming State Lands	639	1.0	11	5	0.0
	Wyoming State Lands	799	1.0	12	5	0.0
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	0.7	7	3	0.0
John A. Maneotis	Colorado State Land Board	8,884	3.0	33	14	0.0
Nottingham Land & Livestock	Colorado State Land Board	28,927	4.0	45	18	0.0
Tuttle Livestock Company, LLC	Colorado State Land Board	3,889	0.2	2	1	0.0
Visintainer Sheep Company	Colorado State Land Board	6,885	1.0	11	5	0.0
State Total		**60,259**	**13.4**	**149**	**62**	**0.0**
Combined Total		**1,581,590**	**201.4**	**2,235**	**926**	**0.0**
Alternative WYCO-C						
Chace Block	BLM Rawlins Field Office	66,021	3.1	34	14	0.0
Continental	BLM Rawlins Field Office	25,721	1.5	16	7	0.0
Daley Ranch	BLM Rawlins Field Office	26,194	4.1	46	19	0.0
Dana Block North	BLM Rawlins Field Office	70,239	15.2	169	70	0.0
Echo Springs	BLM Rawlins Field Office	45,517	5.9	66	27	0.0
Ellis Block	BLM Rawlins Field Office	16,307	0.4	4	2	0.0
Ft. Steele Breaks	BLM Rawlins Field Office	20,569	2.0	22	9	0.0
Lazy Y S Ranch	BLM Rawlins Field Office	17,849	4.5	50	21	0.0
Medicine Bow	BLM Rawlins Field Office	8,641	2.0	23	9	0.0
North Barrel	BLM Rawlins Field Office	59,365	2.7	30	13	0.0
North Laclede	BLM Rawlins Field Office	41,501	10.9	121	50	0.0
Pass Creek Ridge	BLM Rawlins Field Office	59,770	7.1	79	33	0.0
Pine Grove/Bolten	BLM Rawlins Field Office	282,920	20.6	229	95	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Powder Rim Rotation	BLM Rawlins Field Office	47,004	8.1	90	37	0.0
Quealey Block	BLM Rawlins Field Office	56,145	4.0	44	18	0.0
Riner	BLM Rawlins Field Office	56,011	10.7	119	49	0.0
Rotten Springs	BLM Rawlins Field Office	21,139	2.7	30	13	0.0
Sand Creek	BLM Rawlins Field Office	30,033	4.2	46	19	0.0
Sixteen Mile	BLM Rawlins Field Office	81,857	10.9	121	50	0.0
South Laclede	BLM Rawlins Field Office	52,957	9.4	104	43	0.0
South Wamsutter	BLM Rawlins Field Office	31,410	6.2	69	28	0.0
Willow Creek	BLM Rawlins Field Office	76,454	8.3	93	38	0.0
Cedar Springs Draw	BLM Little Snake Field Office	35,489	7.9	88	36	0.0
East Powder Wash	BLM Little Snake Field Office	27,154	2.5	28	12	0.0
Grounds	BLM Little Snake Field Office	8,012	2.1	23	10	0.0
Horse Draw	BLM Little Snake Field Office	7,414	2.0	22	9	0.0
Nipple Peak	BLM Little Snake Field Office	15,560	4.9	54	23	0.0
Powder Wash	BLM Little Snake Field Office	27,432	2.5	28	12	0.0
Sand Wash	BLM Little Snake Field Office	76,108	2.4	27	11	0.0
Sheepherder Spring	BLM Little Snake Field Office	86,354	4.6	51	21	0.0
Snake River	BLM Little Snake Field Office	62,469	9.9	109	45	0.0
West Wapiti Peak	BLM Little Snake Field Office	10,411	3.4	38	16	0.0
Cedar Springs Draw	BLM Little Snake Field Office	35,489	7.9	88	36	0.0
East Powder Wash	BLM Little Snake Field Office	27,154	2.5	28	12	0.0
Elk Springs	BLM White River Field Office	26,620	8.2	91	38	0.0
Horse Draw	BLM White River Field Office	17,761	6.6	73	30	0.0
Massadona	BLM White River Field Office	10,871	1.0	11	5	0.0
BLM Total		**1,605,223**	**202.5**	**2,248**	**932**	**0.0**
	Wyoming State Lands	635	0.5	5	2	0.0
	Wyoming State Lands	638	1.0	11	5	0.0
	Wyoming State Lands	632	0.2	2	1	0.0
	Wyoming State Lands	637	1.0	11	5	0.0
	Wyoming State Lands	639	1.0	11	5	0.0
	Wyoming State Lands	799	1.0	12	5	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	0.7	7	3	0.0
John A. Maneotis	Colorado State Land Board	8,884	3.0	33	14	0.0
Nottingham Land & Livestock	Colorado State Land Board	28,927	4.0	45	18	0.0
Tuttle Livestock Company, LLC	Colorado State Land Board	3,889	0.2	2	0	0.0
Visintainer Sheep Company	Colorado State Land Board	6,885	1.0	11	5	0.0
State Total		**60,734**	**13.6**	**151**	**63**	**0.0**
Combined Total		**1,642,398**	**205.5**	**2,281**	**945**	**0.0**
Alternative WYCO-D						
44 Ranch	BLM Rawlins Field Office	1,563	1.2	13	5	0.0
Big Robber	BLM Rawlins Field Office	17,649	1.8	20	8	0.0
Brimmer Pastures	BLM Rawlins Field Office	1,504	0.1	1	0	0.0
Chace Block	BLM Rawlins Field Office	66,021	9.7	107	43	0.0
Cherokee	BLM Rawlins Field Office	66,412	2.4	26	10	0.0
Coal Bank Wash	BLM Rawlins Field Office	7,644	2.1	23	9	0.0
Cottonwood Hill	BLM Rawlins Field Office	14,569	2.7	30	12	0.0
Daley Ranch	BLM Rawlins Field Office	26,194	4.1	46	18	0.0
Dana Block North	BLM Rawlins Field Office	70,239	3.2	35	14	0.0
Dana Meadows South	BLM Rawlins Field Office	39,172	9.7	108	43	0.0
Doty Mountain	BLM Rawlins Field Office	85,966	8.2	91	36	0.0
East Muddy	BLM Rawlins Field Office	6,147	2.0	22	9	0.0
Echo Springs	BLM Rawlins Field Office	45,517	4.1	46	18	0.0
Ellis Block	BLM Rawlins Field Office	16,307	0.4	4	2	0.0
Ft. Steele Breaks	BLM Rawlins Field Office	20,569	2.0	22	9	0.0
Grieve Pasture	BLM Rawlins Field Office	2,177	5.4	60	24	0.0
Lazy Y S Ranch	BLM Rawlins Field Office	17,849	7.3	81	32	0.0
Mexican Flats	BLM Rawlins Field Office	15,443	1.2	13	5	0.0
North Baggs	BLM Rawlins Field Office	1,088	3.2	36	14	0.0
North Pine Butte	BLM Rawlins Field Office	2,319	2.1	23	9	0.0
Oppenheimer	BLM Rawlins Field Office	13,240	2.9	32	13	0.0
Pass Creek Ridge	BLM Rawlins Field Office	59,770	10.7	119	47	0.0
Pine Grove/Bolten	BLM Rawlins Field Office	282,920	20.6	229	91	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Poison Buttes	BLM Rawlins Field Office	6,518	3.6	40	16	0.0
Riner	BLM Rawlins Field Office	56,011	10.7	119	47	0.0
Sixteen Mile	BLM Rawlins Field Office	81,857	10.9	121	48	0.0
South Muddy	BLM Rawlins Field Office	1,560	1.4	15	6	0.0
South Pine Butte	BLM Rawlins Field Office	963	1.2	13	5	0.0
V Spreaders	BLM Rawlins Field Office	337	0.1	1	0	0.0
Big Bend	BLM Little Snake Field Office	1,607	1.9	21	8	0.0
Cedar	BLM Little Snake Field Office	7,590	1.9	21	8	0.0
Cedar Springs Draw	BLM Little Snake Field Office	35,489	9.1	101	40	0.0
Chicken Sage	BLM Little Snake Field Office	4,593	2.5	27	11	0.0
Cutoff Gulch	BLM Little Snake Field Office	2,016	0.5	6	2	0.0
Gravel Pit	BLM Little Snake Field Office	1,618	1.6	17	7	0.0
Horse Gulch Sect 15	BLM Little Snake Field Office	37,278	9.6	106	42	0.0
Juniper Mountain	BLM Little Snake Field Office	13,418	2.5	28	11	0.0
Lay Creek	BLM Little Snake Field Office	2,788	1.9	21	8	0.0
Lay Peak Com	BLM Little Snake Field Office	1,680	1.0	11	4	0.0
Little Juniper	BLM Little Snake Field Office	2,657	1.8	20	8	0.0
Lower Fortification	BLM Little Snake Field Office	1,968	1.2	14	5	0.0
N Deception Creek	BLM Little Snake Field Office	13,028	5.3	59	23	0.0
North Pole Gulch	BLM Little Snake Field Office	2,221	1.4	16	6	0.0
State Block EU	BLM Little Snake Field Office	12,812	6.7	75	30	0.0
West Four Mile	BLM Little Snake Field Office	4,279	2.0	22	9	0.0
West Wapiti Peak	BLM Little Snake Field Office	10,411	3.4	38	15	0.0
Elk Springs	BLM White River Field Office	26,620	8.2	91	36	0.0
Horse Draw	BLM White River Field Office	17,761	6.6	73	29	0.0
Massadona	BLM White River Field Office	10,871	1.0	11	4	0.0
BLM Total		**1,238,191**	**204.8**	**2,273**	**901**	**0.0**
	Wyoming State Lands	961	0.2	2	1	0.0
	Wyoming State Lands	638	1.0	11	4	0.0
	Wyoming State Lands	2,637	0.6	6	2	0.0
	Wyoming State Lands	632	0.2	2	1	0.0
	Wyoming State Lands	200	0.2	2	1	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
	Wyoming State Lands	320	0.8	9	4	0.0
	Wyoming State Lands	639	1.0	11	4	0.0
	Wyoming State Lands	799	1.0	12	5	0.0
	Wyoming State Lands	480	1.0	11	4	0.0
C & C Cattle, LLC	Colorado State Land Board	9,930	4.8	54	21	0.0
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	1.0	11	5	0.0
Wilton Earle & Sons	Colorado State Land Board	4,588	2.7	30	12	0.0
Clarence Hannong, Jr.	Colorado State Land Board	317	0.8	9	4	0.0
Clifford T. Henderson	Colorado State Land Board	1,815	2.0	22	9	0.0
John Peroulis & Sons	Colorado State Land Board	12,840	4.2	47	19	0.0
John Raftopoulos	Colorado State Land Board	2,071	1.4	16	6	0.0
Tuttle Livestock Company, LLC	Colorado State Land Board	3,889	0.2	2	1	0.0
Visintainer Sheep Company	Colorado State Land Board	6,885	2.4	26	11	0.0
State Total		**56,867**	**23.6**	**262**	**104**	**0.0**
Combined Total		**1,269,702**	**215.1**	**2,387**	**946**	**0.0**
Alternative WYCO-F						
Big Robber	BLM Rawlins Field Office	17,649	7.0	78	32	0.0
Chace Block	BLM Rawlins Field Office	66,021	3.1	34	14	0.0
Cottonwood Hill	BLM Rawlins Field Office	14,569	6.8	76	31	0.0
Daley Ranch	BLM Rawlins Field Office	26,194	4.1	46	19	0.0
Dana Block North	BLM Rawlins Field Office	70,239	15.2	169	70	0.0
Doty Mountain	BLM Rawlins Field Office	85,966	6.4	72	30	0.0
Echo Springs	BLM Rawlins Field Office	45,517	5.9	66	27	0.0
Ellis Block	BLM Rawlins Field Office	16,307	0.4	4	2	0.0
Ft. Steele Breaks	BLM Rawlins Field Office	20,569	2.0	22	9	0.0
Lazy Y S Ranch	BLM Rawlins Field Office	17,849	4.5	50	21	0.0
Medicine Bow	BLM Rawlins Field Office	8,641	2.0	23	9	0.0
Mexican Flats	BLM Rawlins Field Office	15,443	3.8	42	17	0.0
Mexican Graves	BLM Rawlins Field Office	20,257	3.2	36	15	0.0
Oppenheimer	BLM Rawlins Field Office	13,240	1.2	13	6	0.0
Pass Creek Ridge	BLM Rawlins Field Office	59,770	7.1	79	33	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Pine Grove/Bolten	BLM Rawlins Field Office	282,920	20.6	229	95	0.0
Powder Rim Rotation	BLM Rawlins Field Office	47,004	16.1	178	74	0.0
Quealey Block	BLM Rawlins Field Office	56,145	4.0	44	18	0.0
Red Creek	BLM Rawlins Field Office	32,287	0.9	10	4	0.0
Riner	BLM Rawlins Field Office	56,011	10.7	119	49	0.0
Sixteen Mile	BLM Rawlins Field Office	81,857	10.9	121	50	0.0
South Flat Top	BLM Rawlins Field Office	18,985	2.9	32	13	0.0
South Laclede	BLM Rawlins Field Office	52,957	6.9	77	32	0.0
South Wamsutter	BLM Rawlins Field Office	31,410	7.3	81	34	0.0
Cedar Springs Draw	BLM Little Snake Field Office	35,489	7.9	88	36	0.0
East Powder Wash	BLM Little Snake Field Office	27,154	2.5	28	12	0.0
Grounds	BLM Little Snake Field Office	8,012	2.1	23	10	0.0
Horse Draw	BLM Little Snake Field Office	7,414	2.0	22	9	0.0
Nipple Peak	BLM Little Snake Field Office	15,560	4.9	54	23	0.0
Powder Wash	BLM Little Snake Field Office	27,432	2.5	28	12	0.0
Sand Wash	BLM Little Snake Field Office	76,108	2.4	27	11	0.0
Sheepherder Spring	BLM Little Snake Field Office	86,354	4.6	51	21	0.0
Snake River	BLM Little Snake Field Office	62,469	9.9	109	45	0.0
West Wapiti Peak	BLM Little Snake Field Office	10,411	3.4	38	16	0.0
Elk Springs	BLM White River Field Office	26,620	8.2	91	38	0.0
Horse Draw	BLM White River Field Office	17,761	6.6	73	30	0.0
Massadona	BLM White River Field Office	10,871	1.0	11	5	0.0
BLM Total		**1,569,394**	**211.0**	**2,342**	**971**	**0.0**
	Wyoming State Lands	961	0.4	4	2	0.0
	Wyoming State Lands	638	1.0	11	5	0.0
	Wyoming State Lands	632	0.2	2	1	0.0
	Wyoming State Lands	637	1.0	11	5	0.0
	Wyoming State Lands	639	1.0	11	5	0.0
	Wyoming State Lands	799	1.0	12	5	0.0
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	0.7	7	3	0.0
John A. Maneotis	Colorado State Land Board	8,884	3.0	33	14	0.0
Nottingham Land & Livestock	Colorado State Land Board	28,927	4.0	45	18	0.0

TABLE L-1
GRAZING ALLOTMENTS FOR THE WYOMING TO CLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Tuttle Livestock Company, LLC	Colorado State Land Board	3,889	0.2	2	1	0.0
Visintainer Sheep Company	Colorado State Land Board	6,885	1.0	11	5	0.0
State Total		**61,059**	**13.5**	**150**	**62**	**0.0**
Combined Total		**1,606,581**	**214.0**	**2,375**	**984**	**0.0**

NOTES:

The agency total allotment acreage and the miles crossed do not equal a sum of each agency’s total allotment acreage or miles crossed, due to overlap of allotment boundaries. Also, the combined-total acreage and the miles crossed do not equal a sum of each agency’s total allotment acreage or miles crossed due to overlap of allotment boundaries.

[1] Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire pulling-and-tensioning sites, wire-splicing sites, multi-purpose construction yards, helicopter fly yards, guard structures, and temporary access roads (refer to Table 2-1).

[2] Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures-(pads), communication regeneration stations, substations and series compensation stations, and permanent access roads (refer to Tables 2-1, 2-2, and 2-3).

[3] All percentages of allotments disturbed are less than 0.1 percent. Due to rounding, the percentages are shown as 0.0 percent.

BLM = Bureau of Land Management

USFS = U.S. Forest Service

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Alternative COUT-BAX-B						
West Salt Common	BLM Grand Junction Field Office	104,147	20.3	40	114	0.0
Cathedral Bluffs	BLM White River Field Office	107,888	0.7	122	4	0.0
Douglas Creek	BLM White River Field Office	5,405	3.2	46	18	0.0
Evacuation Creek	BLM White River Field Office	114,907	20.6	47	115	0.0
Hall Draw	BLM White River Field Office	6,940	2.2	78	12	0.0
Hatch Flat	BLM White River Field Office	1,493	0.8	37	4	0.0
Johnson/Trujillo	BLM White River Field Office	19,376	2.1	97	12	0.0
Lower Fletcher Draw	BLM White River Field Office	9,868	2.3	52	13	0.0
Massadona	BLM White River Field Office	10,871	1.9	84	11	0.0
Red Wash	BLM White River Field Office	8,219	2.3	42	13	0.0
Spooky Mountain	BLM White River Field Office	29,666	0.7	34	4	0.0
Spring Creek	BLM White River Field Office	40,229	5.2	81	29	0.0

TABLE L-2 GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES						
Allotment	**Jurisdiction**	**Total Acres of Allotment**	**Miles Crossed**	**Acres of Temporary Disturbance[1]**	**Acres of Permanent Disturbance[2]**	**Percent of Allotment Disturbed[3]**
Twin Buttes	BLM White River Field Office	158,652	15.1	719	84	0.0
Athena	BLM Moab Field Office	46,489	6.0	5	34	0.0
Bar-X	BLM Moab Field Office	21,244	1.5	45	8	0.0
Cisco	BLM Moab Field Office	154,006	21.1	12	118	0.0
Cisco Mesa	BLM Moab Field Office	57,704	9.4	12	53	0.0
Crescent Canyon	BLM Moab Field Office	28,077	5.5	45	31	0.0
Floy Creek	BLM Moab Field Office	24,776	4.6	16	26	0.0
Horse Canyon	BLM Moab Field Office	43,290	6.0	10	34	0.0
Pipeline	BLM Moab Field Office	15,870	4.4	14	24	0.0
San Arroyo	BLM Moab Field Office	139,054	16.4	5	92	0.0
Buckhorn	BLM Price Field Office	47,156	7.1	44	40	0.0
Buckmaster	BLM Price Field Office	55,934	10.8	44	61	0.0
Chimney Rock Flat	BLM Price Field Office	46,641	16.3	34	91	0.0
Little Holes	BLM Price Field Office	10,477	4.5	3	25	0.0
Little Valley	BLM Price Field Office	18,091	5.9	5	33	0.0
Oil Dome	BLM Price Field Office	1,391	1.0	42	6	0.0
R.J.	BLM Price Field Office	2,621	0.6	42	3	0.0
Red Seeps	BLM Price Field Office	25,494	5.6	12	32	0.0
West Huntington	BLM Price Field Office	17,384	7.0	10	39	0.0
Wilberg	BLM Price Field Office	5,509	1.0	6	6	0.0
Apple Spring	BLM Richfield Field Office	3,806	2.7	9	15	0.0
Hop Creek	BLM Richfield Field Office	2,566	2.0	37	11	0.0
Indian Hollow	BLM Richfield Field Office	1,774	1.4	37	8	0.0
BLM Total[4]		**1,386,887**	**218.0**	**22**	**1,221**	**0.0**
Booth Canyon	Manti-La Sal National Forest	2,671	0.9	81	5	0.0
East Mountain	Manti-La Sal National Forest	18,285	4.8	831	27	0.0
Gentry	Manti-La Sal National Forest	34,596	2.7	22	15	0.0
Joes Valley	Manti-La Sal National Forest	8,192	1.7	2	9	0.0
Potter Canyon	Manti-La Sal National Forest	3,346	2.7	1	15	0.0
Skyline S & G	Manti-La Sal National Forest	7,984	2.0	4	11	0.0
South Skyline S & G	Manti-La Sal National Forest	11,695	0.4	2	2	0.0
Trail Mountain	Manti-La Sal National Forest	24,637	4.6	12	26	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
USFS Total		**111,406**	**19.8**	**13**	**111**	**0.0**
Anderson Brothers	Utah School and Institutional Trust Lands	568	1.1	2	6	0.0
Betty Smith	Utah School and Institutional Trust Lands	29,442	8.8	1	49	0.0
Buckhorn Cattle Group	Utah School and Institutional Trust Lands	2,593	0.3	4	2	0.0
Cory Cloward	Utah School and Institutional Trust Lands	989	0.7	2	4	0.0
Craig Bair	Utah School and Institutional Trust Lands	17,301	0.4	13	2	0.0
Division Of Wildlife Resources	Utah School and Institutional Trust Lands	10,361	0.3	34	2	0.0
Donley Ranches, LLC	Utah School and Institutional Trust Lands	2,090	0.7	78	4	0.0
Courtney Guymon	Utah School and Institutional Trust Lands	11,159	6.2	0	35	0.0
Hatch Livestock	Utah School and Institutional Trust Lands	9,999	6.2	10	35	0.0
Holyoak Land & Livestock	Utah School and Institutional Trust Lands	5,876	0.3	28	2	0.0
Holyoak Land & Livestock	Utah School and Institutional Trust Lands	10,401	0.3	31	2	0.0
Donald W. Holyoak	Utah School and Institutional Trust Lands	10,401	0.3	34	2	0.0
Donald W. Holyoak	Utah School and Institutional Trust Lands	5,202	0.4	72	2	0.0
Paul Holyoak	Utah School and Institutional Trust Lands	9,755	0.3	27	2	0.0
Johansen Herefords, LLC	Utah School and Institutional Trust Lands	318	0.2	3	1	0.0
John Vetere, Jr.	Utah School and Institutional Trust Lands	7,373	0.5	15	3	0.0
Kirk & Kris Shiner	Utah School and Institutional Trust Lands	8,984	1.1	219	6	0.0
Lee McElprang	Utah School and Institutional Trust Lands	11,159	6.2	938	35	0.0
Leon McElprang	Utah School and Institutional Trust Lands	9,648	6.2	49	35	0.0
Leon McElprang	Utah School and Institutional Trust Lands	11,159	6.2	10	35	0.0
Thomas McElprang	Utah School and Institutional Trust Lands	10,002	6.2	53	35	0.0
Wayde S. Nielsen	Utah School and Institutional Trust Lands	639	1.2	122	7	0.0
Patsy Allred Trust, Dated 9/4/2013	Utah School and Institutional Trust Lands	2,722	0.8	46	4	0.0
Randy Campbell and	Utah School and Institutional Trust Lands	7,392	0.5	47	3	0.0
Sacco Brothers Land & Livestock Company	Utah School and Institutional Trust Lands	9,006	4.0	78	22	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	987	0.1	37	1	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	1,045	1.0	97	6	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	4,528	0.5	52	3	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	9,975	6.2	84	35	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	10,000	6.2	42	35	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
State Total		**118,604**	**28.3**	**34**	**158**	**0.0**
Combined Total		**1,515,570**	**93.1**	**6**	**522**	**0.0**
Alternative COUT-BAX-C						
West Salt Common	BLM Grand Junction Field Office	104,147	20.3	225	112	0.0
Cathedral Bluffs	BLM White River Field Office	107,888	0.7	8	4	0.0
Douglas Creek	BLM White River Field Office	5,405	3.2	36	18	0.0
Evacuation Creek	BLM White River Field Office	114,907	20.6	229	113	0.0
Hall Draw	BLM White River Field Office	6,940	2.2	24	12	0.0
Hatch Flat	BLM White River Field Office	1,493	0.8	8	4	0.0
Johnson/Trujillo	BLM White River Field Office	19,376	2.1	23	12	0.0
Lower Fletcher Draw	BLM White River Field Office	9,868	2.3	26	13	0.0
Massadona	BLM White River Field Office	10,871	1.9	22	11	0.0
Red Wash	BLM White River Field Office	8,219	2.3	26	13	0.0
Spooky Mountain	BLM White River Field Office	29,666	0.7	8	4	0.0
Spring Creek	BLM White River Field Office	40,229	5.2	57	28	0.0
Twin Buttes	BLM White River Field Office	158,652	15.1	167	83	0.0
Athena	BLM Moab Field Office	46,489	6.0	67	33	0.0
Bar-X	BLM Moab Field Office	21,244	1.5	16	8	0.0
Cisco	BLM Moab Field Office	154,006	21.1	234	116	0.0
Cisco Mesa	BLM Moab Field Office	57,704	9.4	105	52	0.0
Crescent Canyon	BLM Moab Field Office	28,077	5.5	61	30	0.0
Floy Creek	BLM Moab Field Office	24,776	4.6	51	25	0.0
Horse Canyon	BLM Moab Field Office	43,290	6.0	67	33	0.0
Pipeline	BLM Moab Field Office	15,870	4.4	48	24	0.0
San Arroyo	BLM Moab Field Office	139,054	16.4	182	90	0.0
Buckhorn	BLM Price Field Office	47,156	6.8	75	37	0.0
Buckmaster	BLM Price Field Office	55,934	4.3	47	23	0.0
Calf Canyon	BLM Price Field Office	7,561	0.1	1	0.3	0.0
Chimney Rock Flat	BLM Price Field Office	46,641	10.4	116	57	0.0
Desert	BLM Price Field Office	60,902	5.4	59	29	0.0
Little Holes	BLM Price Field Office	10,477	4.3	48	24	0.0
Little Valley	BLM Price Field Office	18,091	5.9	65	32	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Oil Dome	BLM Price Field Office	1,391	1.0	12	6	0.0
R.J.	BLM Price Field Office	2,621	0.6	7	3	0.0
Red Seeps	BLM Price Field Office	25,494	5.6	62	31	0.0
Summerville	BLM Price Field Office	33,272	6.6	73	36	0.0
Trail Springs	BLM Price Field Office	27,384	2.2	24	12	0.0
West Huntington	BLM Price Field Office	17,384	7.0	78	39	0.0
Wilberg	BLM Price Field Office	5,509	1.0	11	6	0.0
Apple Spring	BLM Richfield Field Office	3,806	2.7	30	15	0.0
Hop Creek	BLM Richfield Field Office	2,566	2.0	22	11	0.0
Indian Hollow	BLM Richfield Field Office	1,774	1.4	15	8	0.0
BLM Total[4]		**1,516,006**	**219.3**	**2,435**	**1,206**	**0.0**
Booth Canyon	Manti-La Sal National Forest	2,671	0.9	10	5	0.0
East Mountain	Manti-La Sal National Forest	18,285	4.8	53	26	0.0
Gentry	Manti-La Sal National Forest	34,596	2.7	30	15	0.0
Joes Valley	Manti-La Sal National Forest	8,192	1.7	18	9	0.0
Potter Canyon	Manti-La Sal National Forest	3,346	2.7	30	15	0.0
Skyline S & G	Manti-La Sal National Forest	7,984	2.0	22	11	0.0
South Skyline S & G	Manti-La Sal National Forest	11,695	0.4	4	2	0.0
Trail Mountain	Manti-La Sal National Forest	24,637	4.6	51	25	0.0
USFS Total		**111,406**	**19.8**	**220**	**109**	**0.0**
Anderson Brothers	Utah School and Institutional Trust Lands	568	1.1	12	6	0.0
Betty Smith	Utah School and Institutional Trust Lands	29,442	8.9	99	49	0.0
Buckhorn Cattle Group	Utah School and Institutional Trust Lands	2,593	0.3	3	2	0.0
Cory Cloward	Utah School and Institutional Trust Lands	989	0.7	8	4	0.0
Craig Bair	Utah School and Institutional Trust Lands	17,301	0.4	4	2	0.0
Division Of Wildlife Resources	Utah School and Institutional Trust Lands	10,361	0.3	4	2	0.0
Donley Ranches, LLC	Utah School and Institutional Trust Lands	2,090	0.7	8	4	0.0
Courtney Guymon	Utah School and Institutional Trust Lands	11,159	6.2	69	34	0.0
Hatch Livestock	Utah School and Institutional Trust Lands	9,999	6.2	69	34	0.0
Holyoak Land & Livestock	Utah School and Institutional Trust Lands	5,876	0.3	3	2	0.0
Holyoak Land & Livestock	Utah School and Institutional Trust Lands	10,401	0.3	4	2	0.0
Donald W. Holyoak	Utah School and Institutional Trust Lands	10,401	0.3	4	2	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Donald W. Holyoak	Utah School and Institutional Trust Lands	5,202	0.4	4	2	0.0
Paul Holyoak	Utah School and Institutional Trust Lands	9,755	0.3	4	2	0.0
Johansen Herefords, LLC	Utah School and Institutional Trust Lands	318	0.2	2	1	0.0
John Vetere, Jr.	Utah School and Institutional Trust Lands	7,373	0.5	5	3	0.0
Kirk & Kris Shiner	Utah School and Institutional Trust Lands	8,984	1.1	13	6	0.0
Lee McElprang	Utah School and Institutional Trust Lands	11,159	6.2	69	34	0.0
Leon McElprang	Utah School and Institutional Trust Lands	9,648	6.2	69	34	0.0
Leon McElprang	Utah School and Institutional Trust Lands	11,159	6.2	69	34	0.0
Thomas McElprang	Utah School and Institutional Trust Lands	10,002	6.2	69	34	0.0
Wayde S. Nielsen	Utah School and Institutional Trust Lands	639	1.2	13	7	0.0
Patsy Allred Trust, Dated 9/4/2013	Utah School and Institutional Trust Lands	2,722	0.8	8	4	0.0
Randy Campbell and	Utah School and Institutional Trust Lands	7,392	0.5	5	3	0.0
Sacco Brothers Land & Livestock Company	Utah School and Institutional Trust Lands	9,006	4.4	49	24	0.0
Rex L. Sacco	Utah School and Institutional Trust Lands	9,036	2.1	23	12	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	987	0.1	1	1	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	1,045	1.0	11	6	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	4,528	0.5	5	3	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	9,975	6.2	69	34	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	10,000	6.2	69	34	0.0
State Total		**127,640**	**30.9**	**343**	**170**	**0.0**
Combined Total		**1,644,806**	**243.2**	**2,699**	**1,338**	**0.0**
Alternative COUT-BAX-E						
West Salt Common	BLM Grand Junction Field Office	104,147	20.3	225	110	0.0
Cathedral Bluffs	BLM White River Field Office	107,888	0.7	8	4	0.0
Douglas Creek	BLM White River Field Office	5,405	3.2	36	18	0.0
Evacuation Creek	BLM White River Field Office	114,907	20.6	229	111	0.0
Hall Draw	BLM White River Field Office	6,940	2.2	24	12	0.0
Hatch Flat	BLM White River Field Office	1,493	0.8	8	4	0.0
Johnson/Trujillo	BLM White River Field Office	19,376	2.1	23	11	0.0
Lower Fletcher Draw	BLM White River Field Office	9,868	2.3	26	13	0.0
Massadona	BLM White River Field Office	10,871	1.9	22	11	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Red Wash	BLM White River Field Office	8,219	2.3	26	13	0.0
Spooky Mountain	BLM White River Field Office	29,666	0.7	8	4	0.0
Spring Creek	BLM White River Field Office	40,229	5.2	57	28	0.0
Twin Buttes	BLM White River Field Office	158,652	15.1	167	81	0.0
Athena	BLM Moab Field Office	46,489	6.0	67	33	0.0
Bar-X	BLM Moab Field Office	21,244	1.5	16	8	0.0
Cisco	BLM Moab Field Office	154,006	21.1	234	114	0.0
Cisco Mesa	BLM Moab Field Office	57,704	9.4	105	51	0.0
Crescent Canyon	BLM Moab Field Office	28,077	5.5	61	30	0.0
Floy Creek	BLM Moab Field Office	24,776	4.6	51	25	0.0
Horse Canyon	BLM Moab Field Office	43,290	6.0	67	32	0.0
Pipeline	BLM Moab Field Office	15,870	4.4	48	24	0.0
San Arroyo	BLM Moab Field Office	139,054	16.4	182	89	0.0
Buckmaster	BLM Price Field Office	55,934	4.3	47	23	0.0
Coon Spring	BLM Price Field Office	11,319	9.2	103	50	0.0
Desert	BLM Price Field Office	60,902	9.7	107	52	0.0
Gordon Creek Withdrawl	BLM Price Field Office	21,837	3.4	38	19	0.0
Hiawatha	BLM Price Field Office	5,235	2.8	31	15	0.0
Icelander	BLM Price Field Office	49,564	5.7	63	31	0.0
Little Valley	BLM Price Field Office	18,091	5.9	65	32	0.0
Long Bench	BLM Price Field Office	7,572	3.1	35	17	0.0
Mathis Wash	BLM Price Field Office	5,230	2.0	22	11	0.0
Mounds	BLM Price Field Office	23,077	8.4	94	46	0.0
Mud Springs	BLM Price Field Office	31,495	3.8	42	21	0.0
North Spring	BLM Price Field Office	7,864	0.8	8	4	0.0
Oviatt	BLM Price Field Office	453	1.3	14	7	0.0
South Olsen Lake	BLM Price Field Office	1,897	2.8	31	15	0.0
Staker	BLM Price Field Office	679	0.8	9	4	0.0
Summerville	BLM Price Field Office	33,272	0.5	6	3	0.0
Trail Canyon	BLM Price Field Office	5,860	3.8	42	20	0.0
Washboard	BLM Price Field Office	11,222	4.4	49	24	0.0
Wattis	BLM Price Field Office	5,744	2.6	29	14	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Hop Creek	BLM Richfield Field Office	2,566	1.3	14	7	0.0
Uinta	BLM Richfield Field Office	1,028	1.2	13	6	0.0
BLM Total[4]		**1,508,882**	**229.9**	**2,551**	**1,241**	**0.0**
Beaver Dams/Boulger	Manti-La Sal National Forest	8,809	2.3	26	12	0.0
Burnout	Manti-La Sal National Forest	4,252	3.0	34	16	0.0
Gooseberry-Cottonwood	Manti-La Sal National Forest	4,690	2.8	31	15	0.0
Swens Canyon	Manti-La Sal National Forest	4,643	3.2	35	17	0.0
USFS Total		**22,394**	**11.3**	**126**	**61**	**0.0**
Betty Smith	Utah School and Institutional Trust Lands	29,442	1.4	15	7	0.0
Bill Fasselin	Utah School and Institutional Trust Lands	2,101	2.0	22	11	0.0
Craig Bair	Utah School and Institutional Trust Lands	17,301	0.4	4	2	0.0
Division Of Wildlife Resources	Utah School and Institutional Trust Lands	10,361	0.3	4	2	0.0
Donley Ranches, LLC	Utah School and Institutional Trust Lands	2,090	0.7	8	4	0.0
Bill & Jennie Fasselin	Utah School and Institutional Trust Lands	1,930	1.3	15	7	0.0
Bill & Jennie Fasselin	Utah School and Institutional Trust Lands	1,653	1.1	12	6	0.0
Holyoak Land & Livestock	Utah School and Institutional Trust Lands	5,876	0.3	3	2	0.0
Holyoak Land & Livestock	Utah School and Institutional Trust Lands	10,401	0.3	4	2	0.0
Donald W. Holyoak	Utah School and Institutional Trust Lands	10,401	0.3	4	2	0.0
Donald W. Holyoak	Utah School and Institutional Trust Lands	5,202	0.4	4	2	0.0
Paul Holyoak	Utah School and Institutional Trust Lands	9,755	0.3	4	2	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,289	1.3	14	7	0.0
John Vetere, Jr.	Utah School and Institutional Trust Lands	7,373	0.5	5	3	0.0
Kirk & Kris Shiner	Utah School and Institutional Trust Lands	8,984	1.1	13	6	0.0
Patsy Allred Trust, Dated 9/4/2013	Utah School and Institutional Trust Lands	2,722	0.8	8	4	0.0
Randy Campbell and	Utah School and Institutional Trust Lands	7,392	0.5	5	3	0.0
Ray & Carolyn Jorgensen	Utah School and Institutional Trust Lands	3,195	1.8	20	10	0.0
Sacco Brothers Land & Livestock Company	Utah School and Institutional Trust Lands	9,006	1.2	14	7	0.0
Sacco Brothers Land & Livestock Company	Utah School and Institutional Trust Lands	2,674	1.0	11	5	0.0
Rex L. Sacco	Utah School and Institutional Trust Lands	9,036	2.1	23	11	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	987	0.1	1	1	0.0

TABLE L-2
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	1,045	1.0	11	6	0.0
Nick and Toni Sampinos	Utah School and Institutional Trust Lands	4,528	0.5	5	2	0.0
James Allen Staker	Utah School and Institutional Trust Lands	4,288	1.0	11	5	0.0
Joel Stamatakis	Utah School and Institutional Trust Lands	2,246	0.9	10	5	0.0
Steve & Vivien Stamatakis	Utah School and Institutional Trust Lands	2,246	0.9	10	5	0.0
State Total		**131,712**	**20.9**	**232**	**113**	**0.0**
Combined Total		**1,580,524**	**246.1**	**2,732**	**1,329**	**0.0**

NOTES:
The agency total allotment acreage and the miles crossed do not equal a sum of each agency's total allotment acreage or miles crossed, due to overlap of allotment boundaries. Also, the combined-total acreage and the miles crossed do not equal a sum of each agency's total allotment acreage or miles crossed due to overlap of allotment boundaries.

[1] Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire pulling-and-tensioning sites, wire-splicing sites, multi-purpose construction yards, helicopter fly yards, guard structures, and temporary access roads (refer to Table 2-1).

[2] Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures-(pads), communication regeneration stations, substations and series compensation stations, and permanent access roads (refer to Tables 2-1, 2-2, and 2-3).

[3] All percentages of allotments disturbed are less than 0.1 percent. Due to rounding, the percentages are shown as 0.0 percent.

[4] For the BLM White River Field Office, the unit called "Unallotted" has not been included in the numbers above.

BLM = Bureau of Land Management
USFS = U.S. Forest Service

TABLE L-3 GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES						
Allotment	**Jurisdiction**	**Total Acres of Allotment**	**Miles Crossed**	**Acres of Temporary Disturbance[1]**	**Acres of Permanent Disturbance[2]**	**Percent of Allotment Disturbed[3]**
Alternative COUT-A						
Artesia	BLM White River Field Office	48,932	7.5	84	50	0.0
Massadona	BLM White River Field Office	10,871	3.8	42	25	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	34	20	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	81	48	0.0
Antelope Draw	BLM Vernal Field Office	55,904	11.0	122	72	0.0
Bohemian Bottoms	BLM Vernal Field Office	11,544	4.2	46	28	0.0
Ouray Road	BLM Vernal Field Office	11,961	4.3	47	28	0.0
Powder Wash	BLM Vernal Field Office	26,783	7.0	78	46	0.0
Snake John	BLM Vernal Field Office	10,680	3.3	37	22	0.0
Split Mountain	BLM Vernal Field Office	120,800	8.7	97	57	0.0
Twelve Mile	BLM Vernal Field Office	50,292	4.7	52	31	0.0
BLM Total[4]		**381,416**	**64.8**	**719**	**428**	**0.0**
Cedar Knolls S & G	Manti-La Sal National Forest	5,717	0.0	0	0	0.0
Lake Fork C & H	Manti-La Sal National Forest	30,504	0.9	10	6	0.0
Broad Hollow	Uinta-Wasatch-Cache National Forest	5,161	2.5	28	17	0.0
Center Canyon	Uinta-Wasatch-Cache National Forest	5,324	2.8	31	19	0.0
Davis	Uinta-Wasatch-Cache National Forest	5,200	3.1	34	20	0.0
Diamond Fork	Uinta-Wasatch-Cache National Forest	90,863	6.5	72	43	0.0
Jacob/Baldy	Uinta-Wasatch-Cache National Forest	11,670	2.4	27	16	0.0
Nephi-Salt Creek	Uinta-Wasatch-Cache National Forest	41,210	0.2	3	2	0.0
Trail Hollow	Uinta-Wasatch-Cache National Forest	2,687	1.3	15	9	0.0
USFS Total[5]		**198,337**	**19.8**	**219**	**130**	**0.0**
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	2.0	22	13	0.0
Jack V. Foster	Colorado State Land Board	640	0.2	2	1	0.0
Oscar S. Wyatt, Jr.	Colorado State Land Board	639	0.1	1	1	0.0
Chew Livestock, Inc.	Utah School and Institutional Trust Lands	5,277	0.3	4	2	0.0
Chew Livestock, Inc.	Utah School and Institutional Trust Lands	5,788	0.2	2	2	0.0

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Indian Trail Ranch, LLC	Utah School and Institutional Trust Lands	2,425	1.2	13	8	0.0
Nick Theos Family, LLP	Utah School and Institutional Trust Lands	6,013	3.0	34	20	0.0
State Total		**28,951**	**7.0**	**78**	**46**	**0.0**
Combined Total		**589,059**	**84.5**	**938**	**558**	**0.0**
Alternative COUT-B						
Artesia	BLM White River Field Office	48,932	7.5	86	45	0.0
Massadona	BLM White River Field Office	10,871	3.8	44	23	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	35	18	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	83	44	0.0
Kyune I	BLM Price Field Office	14,506	4.4	50	26	0.0
Price Canyon-West	BLM Price Field Office	7,428	0.9	10	6	0.0
West Fork	BLM Price Field Office	16,707	4.8	54	29	0.0
Antelope Draw	BLM Vernal Field Office	55,904	11.0	125	66	0.0
Bohemian Bottoms	BLM Vernal Field Office	11,544	4.2	47	25	0.0
Ouray Road	BLM Vernal Field Office	11,961	4.3	49	26	0.0
Powder Wash	BLM Vernal Field Office	26,783	7.0	80	42	0.0
Snake John	BLM Vernal Field Office	10,680	3.3	38	20	0.0
Split Mountain	BLM Vernal Field Office	120,800	8.7	99	52	0.0
Twelve Mile	BLM Vernal Field Office	50,292	4.7	53	28	0.0
BLM Total[4]		**420,056**	**74.8**	**853**	**449**	**0.0**
Sowers Canyon	Ashley National Forest	20,695	9.9	112	59	0.0
Cedar Knolls S & G	Manti-La Sal National Forest	5,717	0.0	0	0	0.0
Lake Fork C & H	Manti-La Sal National Forest	30,504	0.9	10	5	0.0
Diamond Fork	Uinta-Wasatch-Cache National Forest	90,863	2.4	28	15	0.0
Jacob/Baldy	Uinta-Wasatch-Cache National Forest	11,670	1.9	21	11	0.0
Nephi-Salt Creek	Uinta-Wasatch-Cache National Forest	41,210	0.2	3	1	0.0
USFS Total[5]		**200,660**	**15.3**	**174**	**92**	**0.0**
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	2.0	23	12	0.0
Jack V. Foster	Colorado State Land Board	640	0.2	2	1	0.0
Oscar S. Wyatt, Jr.	Colorado State Land Board	639	0.1	1	1	0.0
Chew Livestock, Inc.	Utah School and Institutional Trust Lands	5,277	0.3	4	2	0.0

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Chew Livestock, Inc.	Utah School and Institutional Trust Lands	5,788	0.2	3	1	0.0
George Lowe Children	Utah School and Institutional Trust Lands	950	1.1	12	6	0.0
Indian Trail Ranch, LLC	Utah School and Institutional Trust Lands	2,425	1.2	13	7	0.0
James, Jerry, Dix Jensen	Utah School and Institutional Trust Lands	795	0.5	6	3	0.0
Dix Jensen	Utah School and Institutional Trust Lands	7,202	0.4	4	2	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	2.0	22	12	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.3	14	8	0.0
Nick Theos Family, LLP	Utah School and Institutional Trust Lands	6,013	3.0	35	18	0.0
State Total		**43,956**	**12.1**	**138**	**73**	**0.0**
Combined Total		**641,047**	**93.1**	**1,062**	**559**	**0.0**
Alternative COUT-C (Agency and Applicant Preferred Alternative)						
Artesia	BLM White River Field Office	48,932	7.5	84	57	0.0
Massadona	BLM White River Field Office	10,871	3.8	42	29	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	34	23	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	81	55	0.0
Kyune I	BLM Price Field Office	14,506	6.2	69	47	0.0
Sulfur Canyon	BLM Price Field Office	10,941	5.3	59	40	0.0
West Fork	BLM Price Field Office	16,707	5.0	56	38	0.0
Antelope Draw	BLM Vernal Field Office	55,904	12.3	137	92	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	2.7	30	20	0.0
Big Wash	BLM Vernal Field Office	5,367	0.6	7	4	0.0
Castle Peak	BLM Vernal Field Office	51,824	0.6	6	4	0.0
Coyote Wash	BLM Vernal Field Office	107,988	4.8	53	36	0.0
Currant Canyon	BLM Vernal Field Office	6,975	1.6	17	12	0.0
Devils Canyon	BLM Vernal Field Office	22,351	3.0	33	23	0.0
Five Mile	BLM Vernal Field Office	15,622	4.7	52	35	0.0
Green River Amp	BLM Vernal Field Office	9,608	0.2	2	2	0.0
Green River Bottoms	BLM Vernal Field Office	7,159	1.5	17	12	0.0
Little Desert	BLM Vernal Field Office	49,361	15.3	170	115	0.0
Olsen Amp	BLM Vernal Field Office	133,988	1.9	21	14	0.0
Parleys Canyon	BLM Vernal Field Office	16,341	6.3	70	47	0.0
Powder Wash	BLM Vernal Field Office	26,783	7.0	78	53	0.0

TABLE L-3 GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES						
Allotment	**Jurisdiction**	**Total Acres of Allotment**	**Miles Crossed**	**Acres of Temporary Disturbance[1]**	**Acres of Permanent Disturbance[2]**	**Percent of Allotment Disturbed[3]**
Sand Wash	BLM Vernal Field Office	74,352	8.8	98	66	0.0
Seven Sisters	BLM Vernal Field Office	18,787	4.9	55	37	0.0
Snake John	BLM Vernal Field Office	10,680	3.3	37	25	0.0
Split Mountain	BLM Vernal Field Office	120,800	0.9	10	7	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	3.2	36	24	0.0
Water Canyon #2	BLM Vernal Field Office	6,698	2.1	23	16	0.0
White River Bottoms	BLM Vernal Field Office	2,529	0.1	1	1	0.0
Wildhorse Bench	BLM Vernal Field Office	43,562	8.1	90	61	0.0
BLM Total[4]		**948,114**	**132.3**	**1,468**	**992**	**0.0**
Cedar Knolls S & G	Manti-La Sal National Forest	5,717	0.0	0	0	0.0
Lake Fork C & H	Manti-La Sal National Forest	30,504	0.9	10	7	0.0
Diamond Fork	Uinta-Wasatch-Cache National Forest	90,863	2.4	27	18	0.0
Jacob/Baldy	Uinta-Wasatch-Cache National Forest	11,670	1.9	21	14	0.0
Nephi-Salt Creek	Uinta-Wasatch-Cache National Forest	41,210	0.2	9	2	0.0
USFS Total[5]		**179,965**	**5.4**	**60**	**41**	**0.0**
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	2.0	22	15	0.0
Jack V. Foster	Colorado State Land Board	640	0.2	2	1	0.0
Oscar S. Wyatt, Jr.	Colorado State Land Board	639	0.1	1	1	0.0
Bair Brothers Sheep Company, LLC	Utah School and Institutional Trust Lands	5,579	0.8	9	6	0.0
Chew Livestock, Inc.	Utah School and Institutional Trust Lands	5,277	0.3	4	3	0.0
Enervest Operating, LLC	Utah School and Institutional Trust Lands	2,468	2.2	24	16	0.0
Jacquelyn B. Oman	Utah School and Institutional Trust Lands	648	0.4	5	3	0.0
James Allen Staker	Utah School and Institutional Trust Lands	648	0.4	5	3	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	2.4	27	18	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.2	13	9	0.0
JTJJ Enterprises, Ltd	Utah School and Institutional Trust Lands	605	1.0	11	8	0.0
Kirk A. Shiner	Utah School and Institutional Trust Lands	8,436	1.5	16	11	0.0
Kirk A. Shiner	Utah School and Institutional Trust Lands	9,184	0.2	2	2	0.0
Lazy 3X Cattle, LLC	Utah School and Institutional Trust Lands	20,796	6.3	70	47	0.0
Michael Carlson	Utah School and Institutional Trust Lands	1,858	0.5	6	4	0.0

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Nick Theos Family, LLP	Utah School and Institutional Trust Lands	6,013	3.0	34	23	0.0
William Marsing Livestock, Inc.	Utah School and Institutional Trust Lands	1,853	0.3	3	2	0.0
State Total		**78,223**	**22.4**	**248**	**168**	**0.0**
Combined Total		**1,144,878**	**140.2**	**1,556**	**1,052**	**0.0**
Alternative COUT-H						
Artesia	BLM White River Field Office	48,932	9.1	101	64	0.0
Massadona	BLM White River Field Office	10,871	3.8	42	27	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	34	21	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	81	51	0.0
Consumers Wash	BLM Price Field Office	10,723	4.9	54	34	0.0
Gordon Creek Withdrawl	BLM Price Field Office	21,837	5.2	57	36	0.0
Sulfur Canyon	BLM Price Field Office	10,941	3.2	36	23	0.0
Trail Canyon	BLM Price Field Office	5,860	3.8	42	26	0.0
Willow Creek	BLM Price Field Office	15,025	6.1	67	42	0.0
Hop Creek	BLM Richfield Field Office	2,566	1.3	14	9	0.0
Uinta	BLM Richfield Field Office	1,028	1.2	13	8	0.0
Antelope Draw	BLM Vernal Field Office	55,904	3.1	34	22	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	2.7	29	19	0.0
Big Wash	BLM Vernal Field Office	5,367	0.6	7	4	0.0
Bonanza	BLM Vernal Field Office	28,238	4.5	50	32	0.0
Castle Peak	BLM Vernal Field Office	51,824	0.6	6	4	0.0
Coyote Wash	BLM Vernal Field Office	107,988	8.5	94	59	0.0
Currant Canyon	BLM Vernal Field Office	6,975	1.6	17	11	0.0
Devils Canyon	BLM Vernal Field Office	22,351	3.0	33	21	0.0
Five Mile	BLM Vernal Field Office	15,622	4.7	52	33	0.0
Green River Amp	BLM Vernal Field Office	9,608	0.2	2	2	0.0
Green River Bottoms	BLM Vernal Field Office	7,159	1.5	17	11	0.0
Lears Canyon	BLM Vernal Field Office	10,709	1.2	14	9	0.0
Little Desert	BLM Vernal Field Office	49,361	15.3	170	107	0.0
Olsen Amp	BLM Vernal Field Office	133,988	1.9	21	13	0.0
Parleys Canyon	BLM Vernal Field Office	16,341	6.3	70	44	0.0
Raven Ridge	BLM Vernal Field Office	10,985	4.4	49	31	0.0

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Sand Wash	BLM Vernal Field Office	74,352	8.8	98	62	0.0
Seven Sisters	BLM Vernal Field Office	18,787	4.9	55	34	0.0
Snake John	BLM Vernal Field Office	10,680	0.3	3	2	0.0
Water Canyon #2	BLM Vernal Field Office	6,698	2.1	23	15	0.0
White River Bottoms	BLM Vernal Field Office	2,529	0.1	1	1	0.0
Wildhorse Bench	BLM Vernal Field Office	43,562	8.1	90	57	0.0
BLM Total[4]		**871,168**	**133.1**	**1,478**	**932**	**0.0**
Beaver Dams/Boulger	Manti-La Sal National Forest	8,809	2.3	26	16	0.0
Burnout	Manti-La Sal National Forest	4,252	3.0	34	21	0.0
Gooseberry-Cottonwood	Manti-La Sal National Forest	4,690	2.8	31	20	0.0
Swens Canyon	Manti-La Sal National Forest	4,643	3.2	35	22	0.0
USFS Total		**22,394**	**11.3**	**126**	**79**	**0.0**
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	2.0	22	14	0.0
Jack V. Foster	Colorado State Land Board	640	0.2	2	1	0.0
Bair Brothers Sheep Company, LLC	Utah School and Institutional Trust Lands	5,579	1.0	11	7	0.0
Chacon Sheep Company, LLC	Utah School and Institutional Trust Lands	1,218	0.9	10	6	0.0
Chacon Sheep Company, LLC	Utah School and Institutional Trust Lands	2,782	0.3	4	2	0.0
Enervest Operating, LLC	Utah School and Institutional Trust Lands	2,468	1.1	12	8	0.0
Farmland Reserve, Inc.	Utah School and Institutional Trust Lands	1,956	1.2	13	8	0.0
James T. Jensen	Utah School and Institutional Trust Lands	749	0.0	0	0	0.0
Kirk A. Shiner	Utah School and Institutional Trust Lands	8,436	1.5	16	10	0.0
Kirk A. Shiner	Utah School and Institutional Trust Lands	9,184	0.2	2	2	0.0
Lazy 3X Cattle, LLC	Utah School and Institutional Trust Lands	20,796	6.3	70	44	0.0
Michael Carlson	Utah School and Institutional Trust Lands	1,858	0.5	6	4	0.0
Pete Stamatakis	Utah School and Institutional Trust Lands	2,131	2.1	23	15	0.0
Steve Stamatakis	Utah School and Institutional Trust Lands	2,131	2.1	23	15	0.0
State Total		**65,964**	**17.3**	**192**	**121**	**0.0**
Combined Total		**905,960**	**145.6**	**1,616**	**1,019**	**0.0**

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Alternative COUT-I						
Artesia	BLM White River Field Office	48,932	9.1	101	61	0.0
Massadona	BLM White River Field Office	10,871	3.8	42	26	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	34	21	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	81	49	0.0
Artesia	BLM White River Field Office	48,932	9.1	101	61	0.0
Massadona	BLM White River Field Office	10,871	3.8	42	26	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	34	21	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	81	49	0.0
Artesia	BLM White River Field Office	48,932	9.1	101	61	0.0
Massadona	BLM White River Field Office	10,871	3.8	42	26	0.0
Miller Creek	BLM White River Field Office	4,003	3.1	34	21	0.0
Spooky Mountain	BLM White River Field Office	29,666	7.3	81	49	0.0
Bench	BLM Price Field Office	1,366	2.2	24	15	0.0
Cat Canyon	BLM Price Field Office	2,204	3.4	38	23	0.0
Coal Creek	BLM Price Field Office	17,973	6.0	67	41	0.0
Corner	BLM Price Field Office	3,127	0.6	6	4	0.0
Mathis Wash	BLM Price Field Office	5,230	2.0	22	14	0.0
Mounds	BLM Price Field Office	23,077	0.6	7	4	0.0
North Olsen Lake	BLM Price Field Office	4,074	4.2	47	28	0.0
Oviatt	BLM Price Field Office	453	1.3	14	9	0.0
Poison Spring Bench	BLM Price Field Office	11,859	2.9	32	19	0.0
Soldiers Canyon	BLM Price Field Office	22,667	1.6	18	11	0.0
South Olsen Lake	BLM Price Field Office	1,897	2.7	30	18	0.0
Staker	BLM Price Field Office	679	0.8	9	5	0.0
Sulfur Canyon	BLM Price Field Office	10,941	3.2	36	22	0.0
Washboard	BLM Price Field Office	11,222	5.0	55	33	0.0
Wellington	BLM Price Field Office	973	0.4	4	3	0.0
West Huntington	BLM Price Field Office	17,384	3.2	35	21	0.0
Apple Spring	BLM Richfield Field Office	3,806	2.7	30	18	0.0
Hop Creek	BLM Richfield Field Office	2,566	2.0	22	13	0.0
Indian Hollow	BLM Richfield Field Office	1,774	1.4	15	9	0.0

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Antelope Draw	BLM Vernal Field Office	55,904	3.1	34	21	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	2.7	29	18	0.0
Big Wash	BLM Vernal Field Office	5,367	0.6	7	4	0.0
Bonanza	BLM Vernal Field Office	28,238	4.5	50	30	0.0
Castle Peak	BLM Vernal Field Office	51,824	0.6	6	4	0.0
Coyote Wash	BLM Vernal Field Office	107,988	8.5	94	57	0.0
Currant Canyon	BLM Vernal Field Office	6,975	1.6	17	11	0.0
Devils Canyon	BLM Vernal Field Office	22,351	3.0	33	20	0.0
Five Mile	BLM Vernal Field Office	15,622	4.7	52	32	0.0
Green River Amp	BLM Vernal Field Office	9,608	0.2	2	2	0.0
Green River Bottoms	BLM Vernal Field Office	7,159	1.5	17	10	0.0
Lears Canyon	BLM Vernal Field Office	10,709	1.2	14	8	0.0
Little Desert	BLM Vernal Field Office	49,361	15.3	170	103	0.0
Olsen Amp	BLM Vernal Field Office	133,988	1.9	21	12	0.0
Parleys Canyon	BLM Vernal Field Office	16,341	6.3	70	42	0.0
Raven Ridge	BLM Vernal Field Office	10,985	4.4	49	30	0.0
Sand Wash	BLM Vernal Field Office	74,352	8.8	98	59	0.0
Seven Sisters	BLM Vernal Field Office	18,787	4.9	55	33	0.0
Snake John	BLM Vernal Field Office	10,680	0.3	3	2	0.0
Water Canyon #2	BLM Vernal Field Office	6,698	2.1	23	14	0.0
White River Bottoms	BLM Vernal Field Office	2,529	0.1	1	1	0.0
Wildhorse Bench	BLM Vernal Field Office	43,562	8.1	90	54	0.0
BLM Total[4]		**946,459**	**153.7**	**1,706**	**1,030**	**0.0**
Booth Canyon	Manti-La Sal National Forest	2,671	0.9	10	6	0.0
East Mountain	Manti-La Sal National Forest	18,285	4.8	53	32	0.0
Gentry	Manti-La Sal National Forest	34,596	2.7	30	18	0.0
Joes Valley	Manti-La Sal National Forest	8,192	1.7	18	11	0.0
Potter Canyon	Manti-La Sal National Forest	3,346	2.7	30	18	0.0
Skyline S & G	Manti-La Sal National Forest	7,984	2.0	22	14	0.0
South Skyline S & G	Manti-La Sal National Forest	11,695	0.4	4	3	0.0
Trail Mountain	Manti-La Sal National Forest	24,637	4.6	51	31	0.0
USFS Total		**111,406**	**19.8**	**220**	**133**	**0.0**

TABLE L-3 GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES						
Allotment	**Jurisdiction**	**Total Acres of Allotment**	**Miles Crossed**	**Acres of Temporary Disturbance**[1]	**Acres of Permanent Disturbance**[2]	**Percent of Allotment Disturbed**[3]
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	2.0	22	14	0.0
Jack V. Foster	Colorado State Land Board	640	0.2	2	1	0.0
Anderson Brothers	Utah School and Institutional Trust Lands	568	1.1	12	7	0.0
Bair Brothers Sheep Company, LLC	Utah School and Institutional Trust Lands	5,579	1.0	11	7	0.0
Bill Fasselin	Utah School and Institutional Trust Lands	2,101	1.0	12	7	0.0
Chacon Sheep Company, LLC	Utah School and Institutional Trust Lands	1,218	0.9	10	6	0.0
Chacon Sheep Company, LLC	Utah School and Institutional Trust Lands	2,782	0.3	4	2	0.0
Cory Cloward	Utah School and Institutional Trust Lands	989	0.7	8	5	0.0
Courtney Guymon	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Donna Lemmon	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Earl & Sheila Gordon	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Enervest Operating, LLC	Utah School and Institutional Trust Lands	2,468	1.1	12	8	0.0
Farmland Reserve, Inc.	Utah School and Institutional Trust Lands	1,956	1.4	15	9	0.0
Bill & Jennie Fasselin	Utah School and Institutional Trust Lands	1,930	1.7	19	11	0.0
Courtney Guymon	Utah School and Institutional Trust Lands	11,159	3.1	35	21	0.0
Hatch Livestock	Utah School and Institutional Trust Lands	3,034	0.6	7	4.2	0.0
Hatch Livestock	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Hatch Livestock	Utah School and Institutional Trust Lands	9,999	2.9	32	20	0.0
Ira W. Hatch	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Jordan W. Hatch	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Keith A. Larsen	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Kirk A. Shiner	Utah School and Institutional Trust Lands	8,436	1.5	16	10	0.0
Kirk A. Shiner	Utah School and Institutional Trust Lands	9,184	0.2	2	1	0.0
Lazy 3X Cattle, LLC	Utah School and Institutional Trust Lands	20,796	6.3	70	42	0.0
Lee McElprang	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Lee McElprang	Utah School and Institutional Trust Lands	11,159	3.1	35	21	0.0
Leon McElprang	Utah School and Institutional Trust Lands	9,648	2.9	33	20	0.0
Linda M. Muth	Utah School and Institutional Trust Lands	6,208	3.1	34	21	0.0
Leon McElprang	Utah School and Institutional Trust Lands	11,159	3.1	35	21	0.0
Leon McElprang	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0

TABLE L-3
GRAZING ALLOTMENTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Thomas McElprang	Utah School and Institutional Trust Lands	10,002	2.9	32	20	0.0
Michael Carlson	Utah School and Institutional Trust Lands	1,858	0.5	6	3	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	9,975	2.9	33	20	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	10,000	2.9	32	20	0.0
The Earl and Sheila Gordon Trust	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
Sherrel Ward	Utah School and Institutional Trust Lands	13,120	5.9	65	39	0.0
State Total		**102,222**	**32.6**	**362**	**218**	**0.0**
Combined Total		**1,088,260**	**182.4**	**2,025**	**1,222**	**0.0**

NOTES:

The agency total allotment acreage and the miles crossed do not equal a sum of each agency's total allotment acreage or miles crossed, due to overlap of allotment boundaries. Also, the combined-total acreage and the miles crossed do not equal a sum of each agency's total allotment acreage or miles crossed due to overlap of allotment boundaries.

[1] Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire pulling-and-tensioning sites, wire-splicing sites, multi-purpose construction yards, helicopter fly yards, guard structures, and temporary access roads (refer to Table 2-1).

[2] Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures (pads), communication regeneration stations, substations and series compensation stations, and permanent access roads (refer to Tables 2-1, 2-2, and 2-3).

[3] All percentages of allotments disturbed are less than 0.1 percent. Due to rounding, the percentages are shown as 0.0 percent.

[4] For the BLM White River Field Office, the unit called "Unallotted" has not been included in the numbers above.

[5] The unit in Uinta–Wasatch-Cache National Forest called "Watershed Closure" has not been included in the numbers above.

BLM = Bureau of Land Management

USFS = U.S. Forest Service

TABLE L-4
GRAZING ALLOTMENTS FOR THE 345KV TRANSMISSION LINES BETWEEN THE CLOVER AND MONA SUBSTATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
West Mona (04521)	Bureau of Land Management Fillmore Field Office	15,913	1.2	12	13	>1.0
Paint Mine (03515)	Bureau of Land Management Fillmore Field Office	3,822	1.1	11	12	>1.0

NOTES:
The agency total allotment acreage and the miles crossed do not equal a sum of each agency’s total allotment acreage or miles crossed, due to overlap of allotment boundaries. Also, the combined-total acreage and the miles crossed do not equal a sum of each agency’s total allotment acreage or miles crossed due to overlap of allotment boundaries.

[1] Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire pulling-and-tensioning sites, wire-splicing sites, multi-purpose construction yards, helicopter fly yards, guard structures, and temporary access roads (refer to Table 2-1).

[2] Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures (pads), communication regeneration stations, substations and series compensation stations, and permanent access roads (refer to Tables 2-1, 2-2, and 2-3).

[3] All percentages of allotments disturbed are less than 0.1 percent. Due to rounding, the percentages are shown as 0.0 percent.

TABLE L-5
GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Alternative WYCO-B – Little Snake River Crossing						
Alternative WYCO-B (Link C71 [4.9 miles])						
Snake River	BLM Little Snake Field Office	62,469	4.9	54	17	0.0
BLM Total		**62,469**	**4.9**	**54**	**17**	**0.0**
Visintainer Sheep Company	Colorado State Land Board	6,885	1.0	11	4	0.0
State Total		**6,885**	**1.0**	**11**	**4**	**0.0**
Combined Total		**67,629**	**4.9**	**54**	**17**	**0.0**
Variation 1 Link C72 (5.4 miles)						
Snake River	BLM Little Snake Field Office	62,469	5.4	60	22	0.0
BLM Total		**62,469**	**5.4**	**60**	**22**	**0.0**
Combined Total		**62,469**	**5.4**	**60**	**22**	**0.0**
Alternative WYCO-B – Deerlodge Road Area						
Alternative WYCO-B (Links C92, C171, C172, C173, C174 [6.5 miles])						
Cedar Springs Draw	BLM Little Snake Field Office	35,489	2.6	29	11	0.0
West Wapiti Peak	BLM Little Snake Field Office	10,411	3.4	38	14	0.0
Elk Springs	BLM White River Field Office	26,620	0.5	5	2	0.0
BLM Total[4]		**72,520**	**6.5**	**72**	**27**	**0.0**
Combined Total		**72,520**	**6.5**	**72**	**27**	**0.0**

TABLE L-5
GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Variation 1 (C94, C93 [6.5 miles])						
Cedar Springs Draw	BLM Little Snake Field Office	35,489	0.1	1	0	0.0
Disappointment	BLM Little Snake Field Office	32,302	3.6	40	12	0.0
Elk Springs	BLM White River Field Office	26,620	0.7	8	2	0.0
BLM Total		**94,411**	**4.5**	**49**	**14**	**0.0**
Combined Total[4]		**94,411**	**4.5**	**49**	**14**	**0.0**
Variation 2 (Links C94, C95 [7.7 miles])						
Cedar Springs Draw	BLM Little Snake Field Office	35,489	0.1	1	1	0.0
Disappointment	BLM Little Snake Field Office	32,302	5.0	56	21	0.0
Elk Springs	BLM White River Field Office	26,620	0.6	6	2	0.0
BLM Total[4]		**94,411**	**5.6**	**63**	**24**	**0.0**
Cross Mountain Ranch Limited Partnership Company	Colorado State Land Board	8,168	1.0	11	4	0.0
State Total		**8,168**	**1.0**	**11**	**4**	**0.0**
Combined Total		**98,623**	**5.6**	**63**	**24**	**0.0**
Alternative COUT-C – Colorado-Utah Border						
Alternative COUT-C (Links C188, U242, U280, U285 [23.5 mile])						
Antelope Draw	BLM Vernal Field Office	55,904	9.2	98	32	0.0
Coyote Wash	BLM Vernal Field Office	107,988	4.6	49	16	0.0
Powder Wash	BLM Vernal Field Office	26,783	7.0	75	25	0.0
Snake John	BLM Vernal Field Office	10,680	3.3	35	12	0.0
Split Mountain	BLM Vernal Field Office	120,800	0.9	10	3	0.0
Artesia	BLM White River Field Office	48,932	4.4	47	16	0.0
BLM Total[4]		**371,067**	**29.5**	**313**	**103**	**0.0**
Oscar S. Wyatt, Jr.	Colorado State Land Board	639	0.1	1	0	0.0
Bair Brothers Sheep Company, LLC	Utah School and Institutional Trust Lands	5,579	0.8	8	3	0.0
Chew Livestock, Inc.	Utah School and Institutional Trust Lands	5,277	0.3	4	1	0.0
Nick Theos Family, LLP	Utah School and Institutional Trust Lands	6,013	3.0	32	11	0.0
State Total		**17,508**	**4.2**	**45**	**15**	**0.0**
Combined Total		**374,273**	**29.5**	**313**	**103**	**0.0**

TABLE L-5 GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS						
Allotment	**Jurisdiction**	**Total Acres of Allotment**	**Miles Crossed**	**Acres of Temporary Disturbance[1]**	**Acres of Permanent Disturbance[2]**	**Percent of Allotment Disturbed[3]**
Variation 1 (Links C187, U241, U260, U290 [30.4 miles])						
Bonanza	BLM Vernal Field Office	28,238	4.5	49	15	0.0
Coyote Wash	BLM Vernal Field Office	107,988	8.2	90	27	0.0
Raven Ridge	BLM Vernal Field Office	10,985	4.4	48	15	0.0
Snake John	BLM Vernal Field Office	10,680	0.3	3	1	0.0
Artesia	BLM White River Field Office	48,932	6.0	65.4	20	0.0
BLM Total[4]		**206,803**	**23.4**	**256**	**77**	**0.0**
Bair Brothers Sheep Company, LLC	Utah School and Institutional Trust Lands	5,579	1.0	11	3	0.0
Chacon Sheep Company, LLC	Utah School and Institutional Trust Lands	1,218	0.9	10	3	0.0
Chacon Sheep Company, LLC	Utah School and Institutional Trust Lands	2,782	0.3	4	1	0.0
State Total		**9,579**	**2.2**	**24**	**7**	**0.0**
Combined Total		**207,651**	**23.4**	**256**	**77**	**0.0**
Alternative COUT-C – Argyle Ridge						
Alternative COUT-C (Link U413 [4.1 miles])						
Sulfur Canyon	BLM Price Field Office	10,941	3.6	34	36	0.0
Parleys Canyon	BLM Vernal Field Office	16,341	0.4	4	4	0.0
BLM Total		**27,281**	**4.1**	**39**	**41**	**0.0**
Enervest Operating, LLC	Utah School and Institutional Trust Lands	2,468	1.1	10	11	0.0
State Total		**2,468**	**1.1**	**10**	**11**	**0.0**
Combined Total		**27,375**	**4.1**	**39**	**41**	**0.0**
Variation 1 (Link U407 [4.0 miles])						
Sulfur Canyon	BLM Price Field Office	10,941	1.4	13	17	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	0.9	9	11	0.0
Lears Canyon	BLM Vernal Field Office	10,709	1.2	12	15	0.0
Parleys Canyon	BLM Vernal Field Office	16,341	0.4	4	5	0.0
BLM Total		**58,699**	**4.0**	**38**	**47**	**0.0**
Combined Total		**58,699**	**4.0**	**38**	**47**	**0.0**
Alternative COUT-C – Camp Timberlane/Argyle Canyon						
Alternative COUT-C (Links U408, U411, U417, U445, U504, U508, U514, U516, U560 [35.3 miles])						
Kyune I	BLM Price Field Office	14,506	6.2	65	69	0.0
Sulfur Canyon	BLM Price Field Office	10,941	1.5	16	17	0.0
West Fork	BLM Price Field Office	16,707	5.0	53	56	0.0

TABLE L-5
GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Argyle Ridge	BLM Vernal Field Office	20,709	2.5	27	28	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	3.2	34	36	0.0
BLM Total		**67,983**	**18.5**	**194**	**205**	**0.0**
Jacquelyn B. Oman	Utah School and Institutional Trust Lands	648	0.4	5	5	0.0
James Allen Staker	Utah School and Institutional Trust Lands	648	0.4	5	5	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	2.4	25	27	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.2	13	13	0.0
JTJJ Enterprises, Ltd	Utah School and Institutional Trust Lands	605	1.0	11	11	0.0
William Marsing Livestock, Inc.	Utah School and Institutional Trust Lands	1,853	0.3	3	3	0.0
State Total		**9,165**	**5.3**	**56**	**59**	**0.0**
Combined Total		**72,753**	**21.0**	**221**	**233**	**0.0**
Variation 1 (Links U408, U411, U417, U415, U441, U443, U502, U508, U514, U516, U560 [34.4 miles])						
Kyune I	BLM Price Field Office	14,506	6.2	65	69	0.0
Sulfur Canyon	BLM Price Field Office	10,941	1.5	16	16	0.0
West Fork	BLM Price Field Office	16,707	5.0	53	55	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	2.5	27	28	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	3.2	34	35	0.0
BLM Total		**67,983**	**18.5**	**194**	**203**	**0.0**
Jacquelyn B. Oman	Utah School and Institutional Trust Lands	648	0.4	5	5	0.0
James Allen Staker	Utah School and Institutional Trust Lands	648	0.4	5	5	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	0.7	7	8	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.2	13	13	0.0
JTJJ Enterprises, Ltd	Utah School and Institutional Trust Lands	605	1.0	11	11	0.0
William Marsing Livestock, Inc.	Utah School and Institutional Trust Lands	1,853	0.3	3	3	0.0
State Total		**9,165**	**3.6**	**38**	**40**	**0.0**
Combined Total		**72,753**	**19.3**	**202**	**212**	**0.0**
Variation 2 (Links U408, U411, U417, U415, U441, U439, U512, U514, U540, U515, U560 [34.7 miles])						
Kyune I	BLM Price Field Office	14,506	5.1	54	61	0.0
Sulfur Canyon	BLM Price Field Office	10,941	1.5	16	18	0.0
West Fork	BLM Price Field Office	16,707	5.9	62	71	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	2.5	27	30	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	3.2	34	38	0.0
BLM Total		**67,983**	**18.3**	**192**	**218**	**0.0**

TABLE L-5
GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Avintaquin	Ashley National Forest	9,232	0.1	2	2	0.0
Horse Ridge	Ashley National Forest	17,745	0.3	3	4	0.0
Tabbyune	Uinta-Wasatch-Cache National Forest	8,733	1.1	12	14	0.0
USFS Total[5]		**35,707**	**1.6**	**17**	**19**	**0.0**
Jacquelyn B. Oman	Utah School and Institutional Trust Lands	648	0.4	5	5	0.0
James Allen Staker	Utah School and Institutional Trust Lands	648	0.4	5	5	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	1.1	11	13	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.2	13	15	0.0
JTJJ Enterprises, Ltd	Utah School and Institutional Trust Lands	605	1.0	11	12	0.0
William Marsing Livestock, Inc.	Utah School and Institutional Trust Lands	1,853	0.3	3	3	0.0
State Total		**9,165**	**4.0**	**42**	**48**	**0.0**
Combined Total		**108,458**	**21.0**	**221**	**250**	**0.0**
Variation 3 (Links U409, U414, U417, U445, U504, U508, U514, U516, U560 [35.3 miles])						
Kyune I	BLM Price Field Office	14,506	6.2	65	57	0.0
Sulfur Canyon	BLM Price Field Office	10,941	0.3	3	3	0.0
West Fork	BLM Price Field Office	16,707	5.0	53	46	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	4.6	48	42	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	2.3	25	22	0.0
BLM Total		**67,983**	**18.5**	**194**	**170**	**0.0**
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	2.4	25	22	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.2	13	11	0.0
William Marsing Livestock, Inc.	Utah School and Institutional Trust Lands	1,853	0.3	3	3	0.0
State Total		**7,912**	**3.9**	**41**	**36**	**0.0**
Combined Total		**72,753**	**21.0**	**220**	**193**	**0.0**
Variation 4 (Links U409, U419, U437, U511, U520, U514, U516, U560 [34.6 miles])						
Kyune I	BLM Price Field Office	14,506	6.2	65	47	0.0
Sulfur Canyon	BLM Price Field Office	10,941	0.3	3	2	0.0
West Fork	BLM Price Field Office	16,707	5.0	53	38	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	5.0	53	38	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	2.4	25	18	0.0
BLM Total		**67,983**	**19.0**	**199**	**144**	**0.0**
George Lowe Children	Utah School and Institutional Trust Lands	950	0.5	5	4	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	2.2	23	17	0.0

TABLE L-5
GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
James T. Jensen	Utah School and Institutional Trust Lands	2,919	1.2	13	9	0.0
William Marsing Livestock, Inc.	Utah School and Institutional Trust Lands	1,853	0.3	3	2	0.0
State Total		**8,862**	**4.2**	**44**	**32**	**0.0**
Combined Total		**73,703**	**21.8**	**229**	**166**	**0.0**
Variation 5 (Links U409, U419, U437, U511, U513, U515, U560 [33.5 miles])						
Kyune I	BLM Price Field Office	14,506	4.9	52	43	0.0
Sulfur Canyon	BLM Price Field Office	10,941	0.3	3	3	0.0
West Fork	BLM Price Field Office	16,707	6.2	65	54	0.0
Argyle Ridge	BLM Vernal Field Office	20,709	5.0	3	44	0.0
Water Canyon #1	BLM Vernal Field Office	5,121	2.4	25	21	0.0
BLM Total		**67,983**	**18.8**	**197**	**165**	**0.0**
Avintaquin	Ashley National Forest	9,232	0.1	2	1	0.0
Horse Ridge	Ashley National Forest	17,745	0.3	4	3	0.0
Wilbur Bench	Ashley National Forest	12,129	0.4	4	4	0.0
Tabbyune	Uinta-Wasatch-Cache National Forest	8,733	1.1	12	10	0.0
USFS Total[5]		**47,836**	**2.0**	**21**	**18**	**0.0**
George Lowe Children	Utah School and Institutional Trust Lands	950	0.5	5	4	0.0
James, Jerry, Dix Jensen	Utah School and Institutional Trust Lands	795	0.2	2	2	0.0
Farris A. Jensen	Utah School and Institutional Trust Lands	3,140	0.5	5	4	0.0
James T. Jensen	Utah School and Institutional Trust Lands	2,919	0.3	3	3	0.0
State Total		**7,804**	**1.4**	**15**	**13**	**0.0**
Combined Total		**119,860**	**21.8**	**228**	**192**	**0.0**
Alternative COUT-A – Chipman Creek Area, Uinta National Forest						
Chipman Creek (Link U429 [3.8 miles])						
Davis	Uinta-Wasatch-Cache National Forest	5,200	3.1	29	24	0.0
Jacob/Baldy	Uinta-Wasatch-Cache National Forest	11,670	0.3	3	2	0.0
Trail Hollow	Uinta-Wasatch-Cache National Forest	2,687	0.5	5	4	0.0
USFS Total[5]		**19,558**	**3.8**	**36**	**30**	**0.0**
Combined Total		**19,558**	**3.8**	**36**	**30**	**0.0**

TABLE L-5
GRAZING ALLOTMENTS FOR ALL ROUTE VARIATIONS

Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Variation 1 (Link U428 [3.4 miles])						
Chipman	Uinta-Wasatch-Cache National Forest	4,603	1.1	18	3	0.0
Davis	Uinta-Wasatch-Cache National Forest	5,200	0.9	15	2	0.0
Jacob/Baldy	Uinta-Wasatch-Cache National Forest	11,670	0.5	9	1	0.0
Trail Hollow	Uinta-Wasatch-Cache National Forest	2,687	0.8	14	2	0.0
USFS Total[5]		**24,161**	**3.4**	**55**	**9**	**0.0**
Combined Total		**24,161**	**3.4**	**55**	**9**	**0.0**

NOTES:

The agency total allotment acreage and the miles crossed do not equal a sum of each agency’s total allotment acreage or miles crossed, due to overlap of allotment boundaries. Also, the combined-total acreage and the miles crossed do not equal a sum of each agency’s total allotment acreage or miles crossed due to overlap of allotment boundaries.

[1] Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire pulling-and-tensioning sites, wire-splicing sites, multi-purpose construction yards, helicopter fly yards, guard structures, and temporary access roads (refer to Table 2-1).

[2] Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures (pads), communication regeneration stations, substations and series compensation stations, and permanent access roads (refer to Tables 2-1, 2-2, and 2-3).

[3] All percentages of allotments disturbed are less than 0.1 percent. Due to rounding, the percentages are shown as 0.0 percent.

[4] For the BLM White River Field Office, the unit called “Unallotted” has not been included in the numbers above.

[5] The unit in Uinta–Wasatch-Cache National Forest called "Watershed Closure" has not been included in the numbers above.

BLM = Bureau of Land Management

USFS = U.S. Forest Service

Appendix M
Visual Resources Supporting Data

APPENDIX M – VISUAL RESOURCES SUPPORTING DATA

Information in this appendix was compiled to support the discussion of visual resources in Chapter 3 and Chapter 4. Included as aids are photographs representing selected project-level scenery rating units, a table listing the agency-approved key observation points (KOPs), contrast rating worksheets from each KOP location, and associated visual simulations. Further information regarding the development of the Energy Gateway South Transmission Project's (Project) visual resource assessment including methods and results is provided in the Project's Visual Resource Technical Report.

As described in Section 3.2.18.4, project-level scenery rating units were developed within a 6-mile-wide corridor centered on the reference centerlines across all jurisdictions (visual resource study corridor). To aid the reader in understanding the scenery crossed by the Project, photographs representing selected project-level scenery rating units have been included in this appendix (Exhibit N1). The selected scenery rating units include typical landscapes representing Class A, Class B, and Class C landscapes (as applicable) in each state as well as key landscapes described in Section 3.2.18. For a complete set of project-level scenery rating unit worksheets, including representative photographs, please refer to the Project's Visual Resource Technical Report.

To comply with *BLM Manual Section 8400 – Visual Resource Management*, in particular Visual Resource Management (VRM) Handbook 8431-1, contrast rating worksheets were developed from each agency-approved KOP location. To maintain consistency across all jurisdictions crossed by the Project, contrast rating worksheets were completed for Bureau of Land Management (BLM), U.S. Forest Service (USFS), tribal, and state-administered lands as well as from private lands. These contrast rating worksheets were used to verify the impact model, document visual contrast resulting from the Project, and identify areas where the Project would not meet the definition of the federal agency visual management objective (BLM VRM Objectives or USFS Visual Quality Objectives [VQO]), which may require an amendment to the applicable agency management plan (BLM resource management plan [RMP] or USFS land and resource management plan [LRMP], referred to in this document as land-use plan amendments).

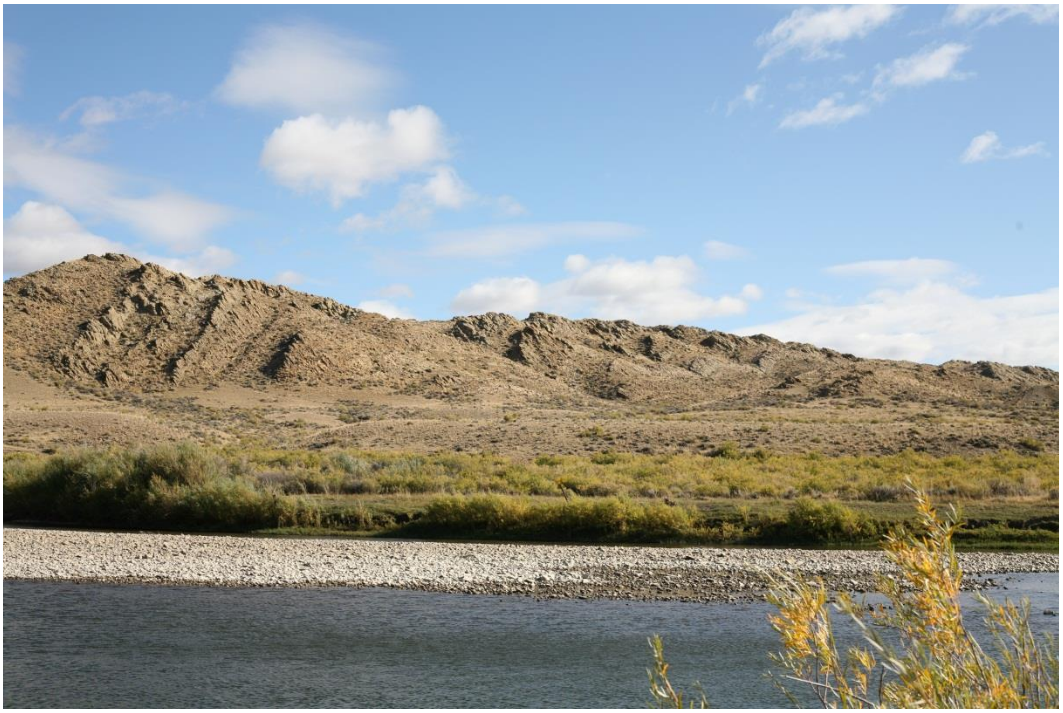
A total of 147 KOPs were identified for analysis and are listed in Table N-1 (Exhibit N2). The table includes nine components for each KOP:

1. KOP identification number,
2. KOP name (viewing location name),
3. concern level factors (viewing duration, volume of use, concern for aesthetics, scenic or historic status, type of use, and overall concern level),
4. the associated Project link number(s),
5. whether the view is from BLM- or USFS-administered lands, view of BLM- or USFS-administered lands, or would both be located on and view non-federally administered lands (e.g., state-administered lands and private lands),
6. whether the KOP is of national significance,
7. whether a visual simulation was identified,
8. approximate distance from the Project, and
9. a brief rationale describing why each KOP was selected.

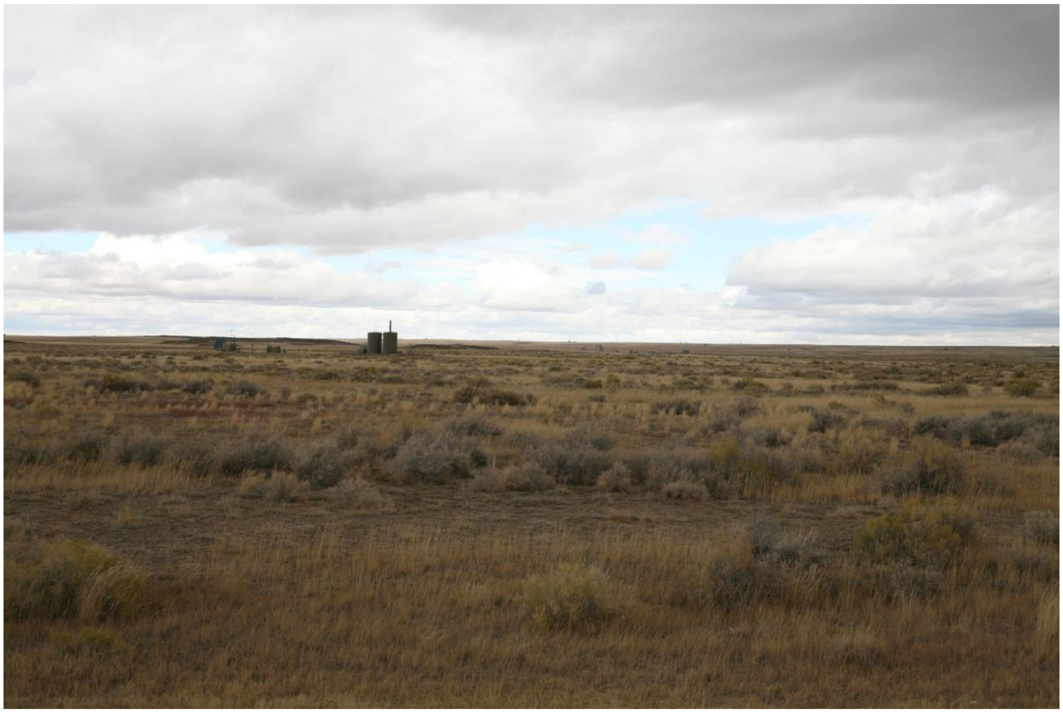
Please note, the concern levels identified for viewing locations not represented by a KOP can be found in the Project's Visual Resource Technical Report. Following the table, each KOP has a completed contrast rating worksheet (Exhibit N2) and where applicable, a visual simulation depicting the existing condition and simulated condition with the addition of the Project (Exhibit N3). Visual simulations were developed to demonstrate the potential impacts and associated contrast generated by the addition of the Project in a variety of landscape settings. A total of 51 simulations were prepared from 47 viewpoints throughout the Project area including views from residential areas, travel routes, recreation areas, and special designations. In addition, a total of 42 cumulative effect simulations were prepared from 38 viewpoints to present the cumulative effect associated with the incremental modification of views through the addition of the Project, TransWest Express Project, and/or the Energy Gateway West Project. The methodology describing the development of visual simulations is contained in the Project Visual Resource Technical Report.

Exhibit M1
Selected Project-level Scenery Rating Unit Photographs

Wyoming

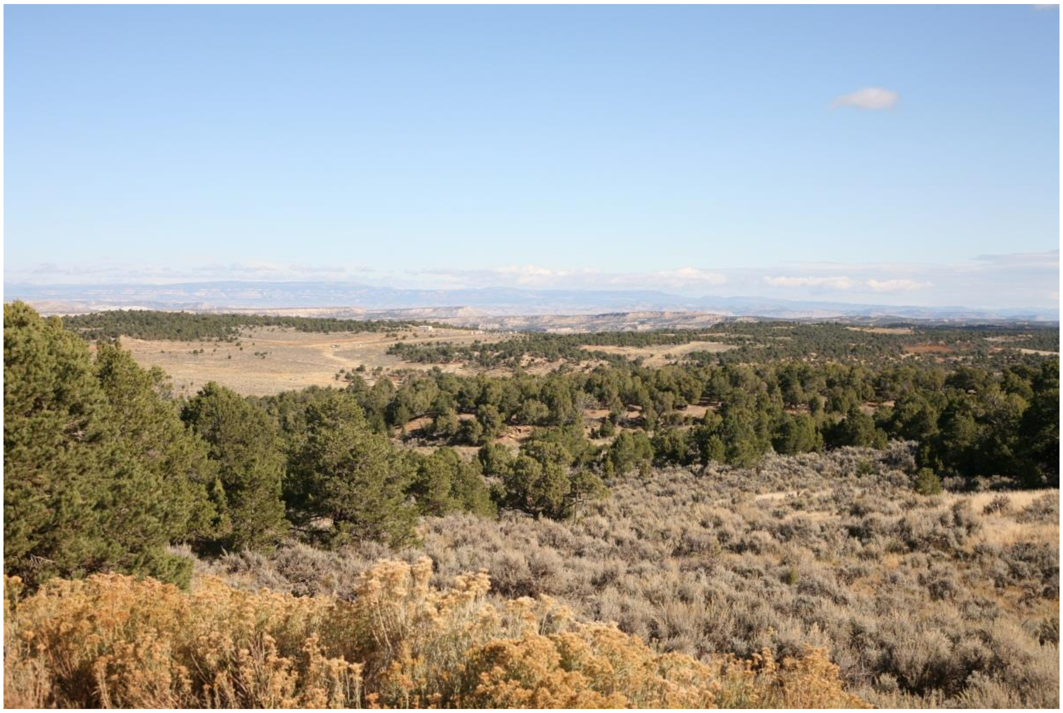


Typical Class B Scenery

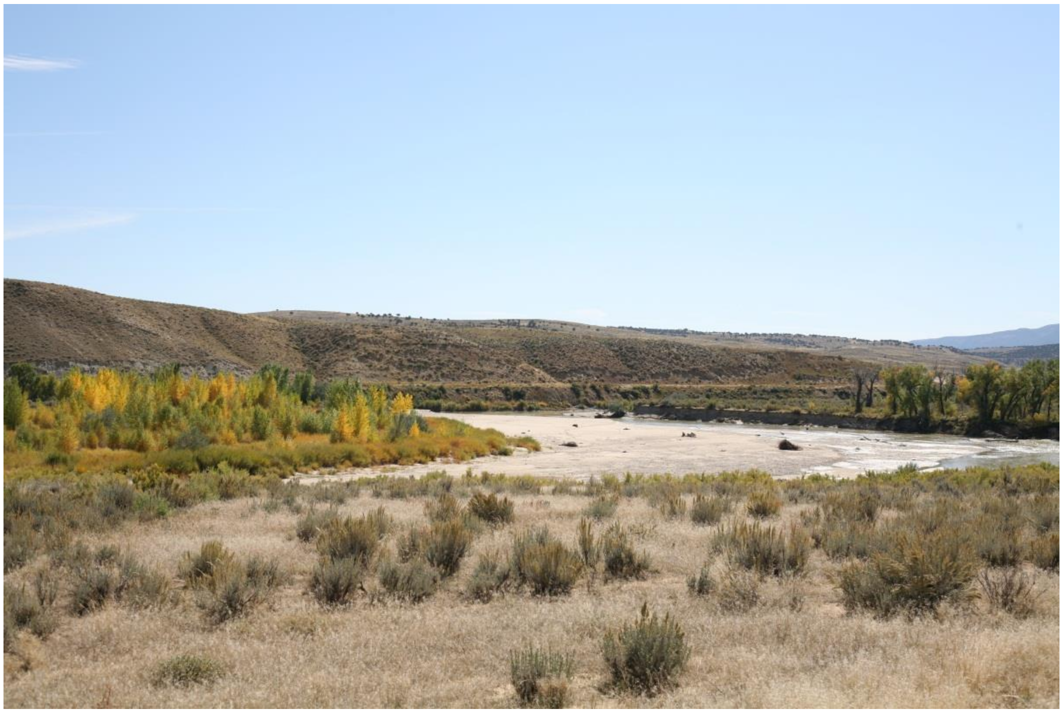


Typical Class C Scenery

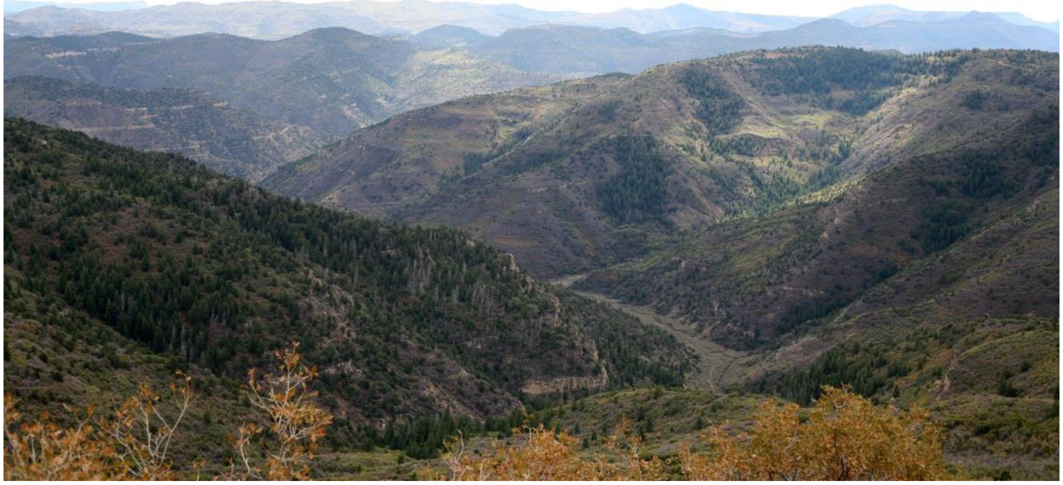
Colorado



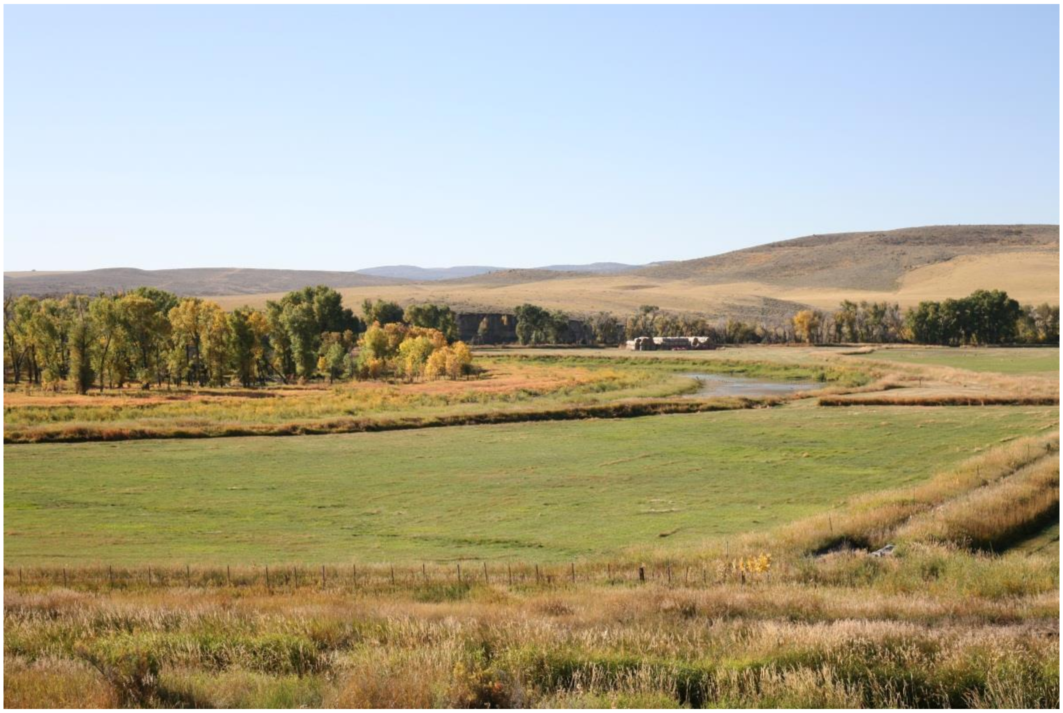
Typical Class B Scenery



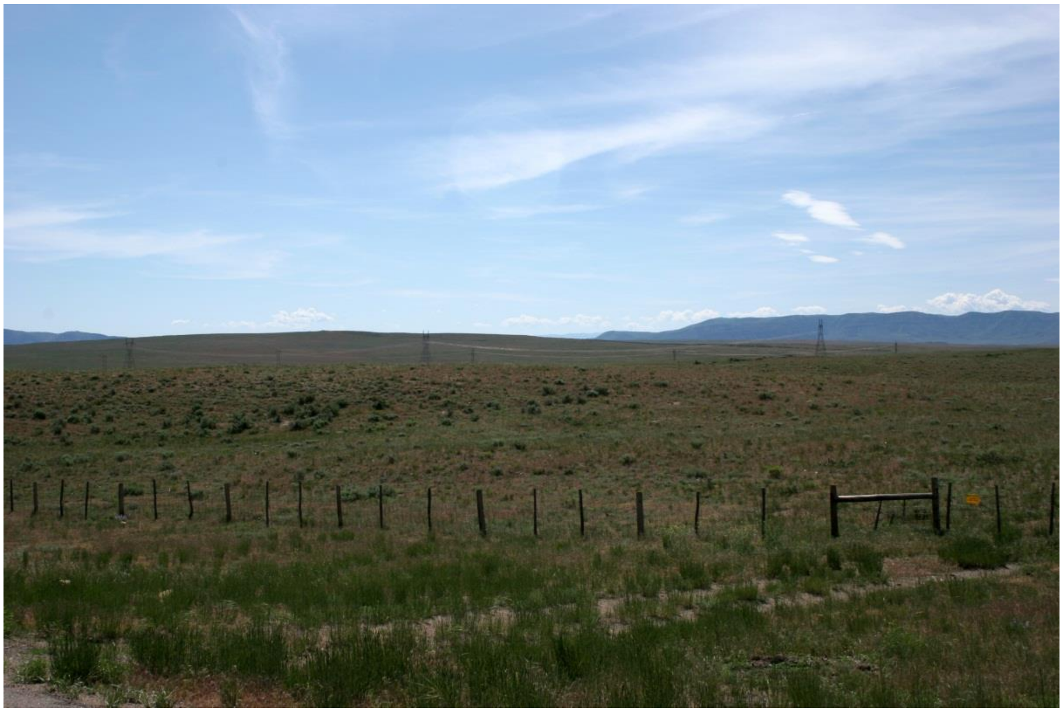
Class B Scenery: Little Snake River



Class B Scenery: Tavaputs Plateau

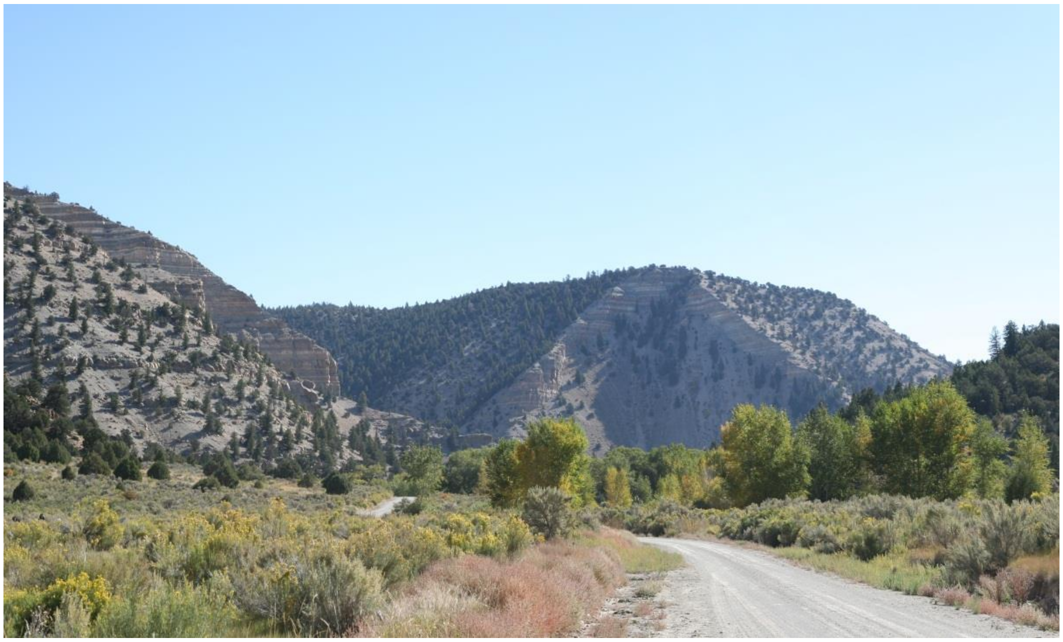


Class B Scenery: Yampa River

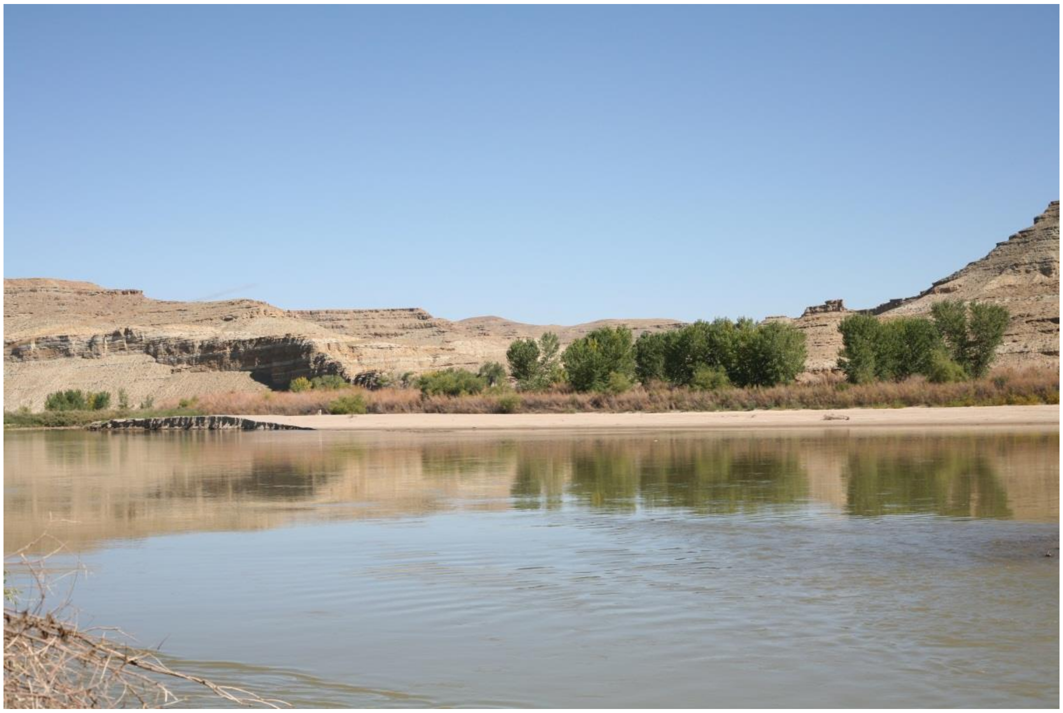


Typical Class C Scenery

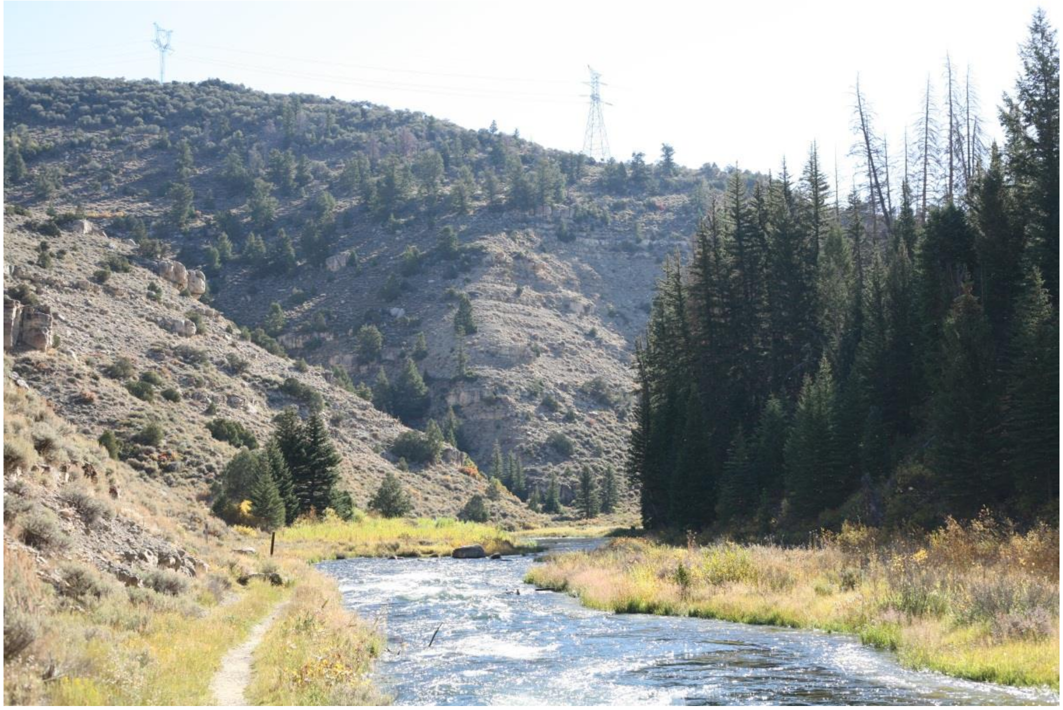
Utah



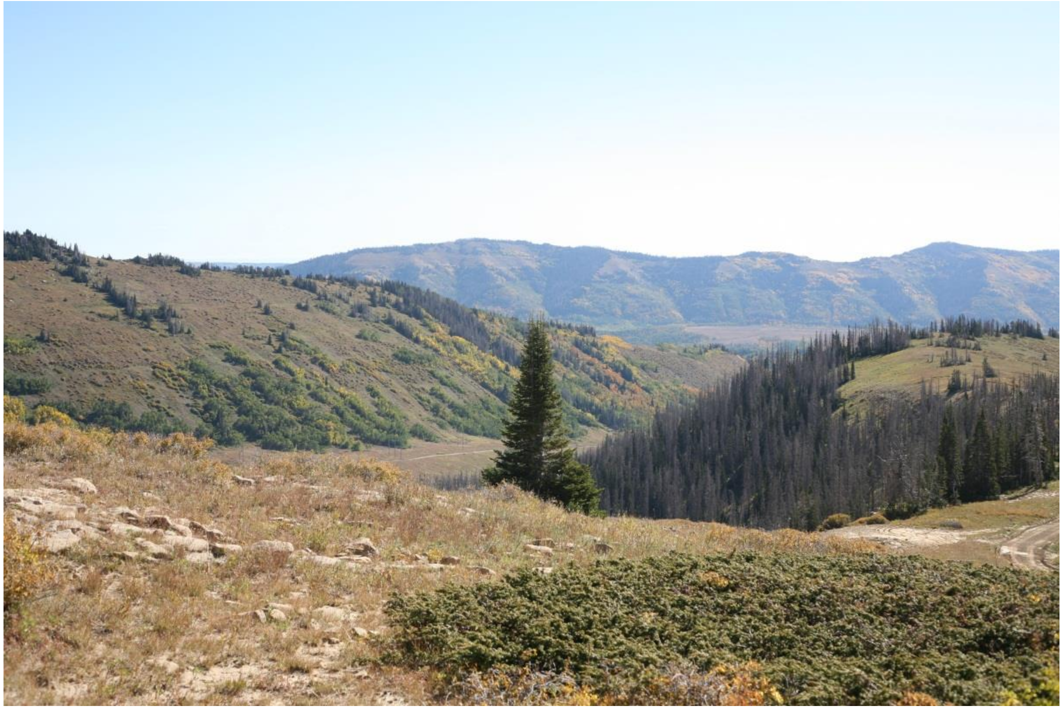
Class A Scenery: Argyle Canyon



Class A Scenery: Green River (Uinta Basin physiographic section)



Class A Scenery: Strawberry River



Class A Scenery: Wasatch Plateau Alpine

Class A Scenery: Wasatch Plateau Park

Typical Class B Scenery

Class B Scenery: Bad Land Cliffs

Class B Scenery: Book Cliffs

Class B Scenery: Wasatch Plateau

Typical Class C Scenery

Exhibit M2
Key Observation Point Contrast Rating Worksheets

LIST OF ACRONYMS AND ABBREVIATIONS[1]

Dr	Drive
FR	Forest Road
HWY	Highway
NF	National Forest
NHD	National Historic District
SB	Scenic Byway
SRMA	Special Recreation Management Area
WMA	Wildlife Management Area
WSA	Wilderness Study Area

Note: [1]These acronyms and abbreviations were used as needed, due to space limitations in the name field, on the visual contrast rating worksheets.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

KOP ID	Viewing Location Name	Concern Level Factors						Link(s)	Key Observation Point				Simulation[1]	Distance from Project	KOP or Simulation Selection Rationale
		Viewing Duration	Volume of Use	Concern for Aesthetics	Scenic or Historic Status	Type of Use	Overall Concern Level		View from BLM/USFS Administered Land)	View of BLM/USFS Administered Land)	Other	National Significance			
WYOMING															
Bureau of Land Management Rawlins Field Office															
73	Baggs residential	Long	Moderate	High		Residential	High	W300		✓				2.2 miles	Residential views of the Project through BLM VRM Class III land
177	Overland Trail historical monument (Wyoming Highway 789)	Long	Moderate	High	Historic	Recreation	High	W110		✓		✓		0.4 mile	View from Overland Trail ruts interpretive pull out (Wyoming Highway 789) of the Project through BLM VRM Class IV land
197	Hanna residential	Long	Moderate	High		Residential	High	W22			✓		✓	0.3 mile	Residential views
198	U.S. Highway 30 (east of Hanna)	Moderate	High	Moderate		Travel Route	Moderate	W22		✓				1.0 mile	Travel route views of the Project through BLM VRM Class IV land
220	North Platte River Special Recreation Management Area	Long	Moderate	High		Recreation	High	W30		✓			✓✓	0.5 mile	Special Recreation Management Area/North Platte River Crossing views of the Project through BLM VRM Class IV land
222	Hanna Draw Road	Moderate-Long	Low-Moderate	Moderate		Travel Route	Moderate	W21	✓					0.75 mile	Travel route/recreation access road views of the Project through BLM VRM Class IV land
224	U.S. Highway 30 (Walcott)	Moderate	High	Moderate		Travel Route	Moderate	W35	✓					0.5 mile	Travel route views of the Project through BLM VRM Class IV land
225	Outlaw Trail Loop Scenic Drive (Wyoming Highway 789 north of Baggs)	Long	High	High	Scenic	Travel Route/ Recreation	High	W111	✓				✓✓	0.1 mile	Long duration travel route view of the Project through BLM VRM Class IV land
226	Interstate 80 (east of Sinclair)	Short	High	Moderate		Travel Route	Moderate	W30	✓					0.3 mile	Travel route views of the Project through BLM VRM Class IV land
227	Wyoming Highway 71	Moderate	High	Moderate		Travel Route	Moderate	W30		✓				0.5 mile	Travel route views of the Project through BLM VRM Class IV land
228	Outlaw Trail Loop Scenic Drive (Wyoming Highway 789 south of Interstate-80)	Long	High	High	Scenic	Travel Route/ Recreation	High	W32	✓					1.0 mile	Travel route views of the Project through BLM VRM Class IV land
229	Wamsutter residential	Long	Moderate	High		Residential	High	W102		✓				2.9 miles	Residential views of the Project through BLM VRM Class III and IV land
275	Overland Historic Trail	Long	Low	High	Historic	Recreation	High	W27		✓		✓		0.5 mile	Historic trail view of the Project through BLM VRM Class III land
276	Cherokee Historic Trail	Long	Low	High	Historic	Recreation	High	W409	✓			✓		0.7 mile	Historic trail view of the Project through BLM VRM Class III land
281	Rawlins to Baggs Historic Trail (Twenty Mile Road)	Long	Low	High	Historic	Recreation	High	W30	✓					0.25 mile	Historic trail view of the Project through BLM VRM Class IV land
286	Adobe Town Wilderness Study Area Destination Route (BLM Road 4411)	Moderate-Long	Moderate	Moderate		Travel Route	Moderate	W27	✓					6.5 miles	Travel route views of the Project through BLM VRM Class III land
295	Fort Fred Steele Historic Site	Long	Moderate-High	High	Historic	Recreation	High	W30		✓				2.3 miles	Historic site views of the Project through BLM VRM Class IV land

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

KOP ID	Viewing Location Name	Concern Level Factors						Link(s)	Key Observation Point				Simulation[1]	Distance from Project	KOP or Simulation Selection Rationale
		Viewing Duration	Volume of Use	Concern for Aesthetics	Scenic or Historic Status	Type of Use	Overall Concern Level		View from BLM/USFS Administered Land)	View of BLM/USFS Administered Land)	Other	National Significance			
COLORADO															
Bureau of Land Management Little Snake Field Office															
50	Dispersed Maybell residential (Juniper Mountain)	Long	Low	High		Residential	High	C106		✓				1.0 mile	Dispersed residential views along the Yampa river of the Project through BLM VRM Class III land
51	Juniper Canyon Recreation Area	Long	Moderate	High		Recreation	High	C106		✓				0.3 mile	View from boat launch and day use picnic site of the Project through BLM VRM Class III land
52	Dispersed residences southwest of Craig	Long	Moderate	High		Residential	High	C105			✓		✓✓	1.1 miles	Dispersed residential views
54	South Beach Recreation Area	Long	Moderate	High		Recreation	Moderate	C105			✓			0.1 mile	Recreation views of Yampa River crossing
56	Colorado State Highway 13 (south of Craig)	Moderate	High	Moderate		Travel Route	Moderate	C105			✓			0.5 mile	View from travel route
58	Dispersed residences south of Craig	Long	Low	High		Residential	High	C101			✓			0.5 mile	Dispersed residential views
59	Dispersed residence southeast of Craig	Long	Low	High		Residential	High	C101			✓			0.3 mile	Dispersed residential views
63	Dispersed residence along Colorado State Highway 13	Long	Low	High		Residential	High	C100			✓			0.9 mile	Dispersed residential views
64	Access to Routt National Forest recreation	Moderate	Moderate	Moderate		Travel Route	Moderate	C100			✓			0.4 mile	View from access to Routt National Forrest
66	Dispersed residence along Colorado State Highway 13	Long	Low	High		Residential	High	C13		✓			✓	0.3 mile	Dispersed residential views through BLM VRM Class III land
67	Dispersed residences south of Baggs	Long	Low	High		Residential	High	C27			✓			0.5 mile	Dispersed residential views
83	Moffat County Road 57	Moderate	Moderate	Moderate		Travel Route	Moderate	C106			✓			0.6 mile	View from travel route
150	Dinosaur National Monument (Deerlodge Road)	Long	High	High		Recreation	High	C93, C173			✓	✓	✓✓	0.1 mile	View from National Monument recreation kiosk
223	U.S. Highway 40 (viewpoint pullout east of Craig)	Long	Low-Moderate	Moderate		Recreation	Moderate	C100			✓			1.6 miles	View from Yampa River/wildlife observation deck
251	U.S. Highway 40 (east of Craig)	Moderate	High	Moderate		Travel Route	Moderate	C100			✓			0.4 mile	View from travel route
252	Colorado State Highway 318 (west of Maybell)	Moderate	High	Moderate		Travel Route	Moderate	C91	✓					0.3 mile	Travel route view of the Project through BLM VRM Class III land
287	Moffat County Road 10	Moderate	Moderate	Moderate		Travel Route	Moderate	C91	✓					0.7miles	View from travel route toward Cross Mountain and the Project through BLM VRM Class III land
288	Colorado State Highway 13 (south of Baggs)	Moderate	High	Moderate		Travel Route	Moderate	C20		✓				1.8 mile	Travel route view of the Project through BLM VRM Class III land
289	Godiva Rim	Moderate	Low-Moderate	Moderate		Travel Route	Moderate	C91	✓					1.2 miles	Proposed scenic road view of the Project through BLM VRM Class III land
290	Sevenmile Ridge Destination Route	Moderate	Low-Moderate	Moderate		Travel Route	Moderate	C91	✓					5.0 miles	View from recreation access of the Project through BLM VRM Class III land
291	Yampa River State Park	Long	Moderate-High	High		Recreation	High	C100			✓			5.2 miles	View from campground within the State Park

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

		Concern Level Factors							Key Observation Point						
KOP ID	**Viewing Location Name**	**Viewing Duration**	**Volume of Use**	**Concern for Aesthetics**	**Scenic or Historic Status**	**Type of Use**	**Overall Concern Level**	**Link(s)**	**View from BLM/USFS Administered Land)**	**View of BLM/USFS Administered Land)**	**Other**	**National Significance**	**Simulation[1]**	**Distance from Project**	**KOP or Simulation Selection Rationale**
297	Elkhead Reservoir Campground	Long	Moderate-High	High		Recreation	High	C100			✓			2.6 miles	View from campground
299	East Cross Mountain River Access	Moderate-Long	Moderate	Moderate-High		Recreation	Moderate	C91	✓				✓✓	2.5 miles	View from Yampa River access of the Project through BLM VRM Class III land
302	Yampa River (Juniper Canyon)	Long	Moderate	High		Recreation	High	C106	✓					0.3 mile	View from canyon of the Project through BLM VRM Class III land
331	Dinosaur National Monument (Deerlodge Road/Yampa Valley Trail)	Long	High	High		Recreation	High	C95		✓		✓	✓✓	0.4 mile	View from National Monument entrance road through BLM VRM Class III land
332	Dinosaur National Monument (Deerlodge Road)	Long	High	High		Recreation	High	C95			✓	✓		0.4 mile	View from National Monument entrance road
Bureau of Land Management White River Field Office															
147	Rangely residential	Long	High	High		Residential	High	C185		✓				0.7 mile	Residential views of the Project through BLM VRM Class III land
210	Dinosaur residential	Long	High	High		Residential	High	C187		✓				1.1 miles	Residential views of the Project through BLM VRM Class III land
211	Dinosaur Visitor Center	Long	High	High		Recreation	High	C187, C188		✓		✓	✓✓	1.5 miles	Recreation area view of the Project through BLM VRM Class III land
239	Dinosaur Diamond Scenic Byway (Colorado State Highway 64)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	C188	✓			✓		0.75 mile	View from scenic byway of the Project through BLM Class III land
240	Colorado State Highway 64	Moderate	High	Moderate		Travel Route	Moderate	C185	✓					1.0 mile	Travel route view of the Project through BLM VRM Class III land
241	Dinosaur Diamond Scenic Byway in Canyon Pintado National Historic District (Colorado State Highway 139)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	C185	✓			✓	✓	0.5 mile	View from scenic byway of the Project through BLM Class III land in the Canyon Pintado National Historic District.
242	Whiskey Creek residential	Long	Low	High		Residential	High	C196		✓				0.3 mile	Residential view of the Project adjacent to Whiskey Creek and BLM VRM Class III land
254	U.S. Highway 40 (east of Dinosaur)	Long	High	Moderate		Travel Route	Moderate	C175	✓					1.0 mile	Travel route view of Project in parallel condition through BLM VRM Class III land
310	Crook’s Brand Rock Art Site	Long	Moderate	High	Historic	Recreation	High	C195	✓				✓✓	0.4 mile	Recreation view of the Project through BLM VRM Class IV land
Bureau of Land Management Grand Junction Field Office															
153	Mack residential	Long	Low	High		Residential	High	C270		✓				0.3 mile	Residential view of Project through BLM VRM Class IV land
243	Baxter Pass Road	Moderate-Long	Moderate	High		Travel Route/ Recreation	High	C196	✓					1.4 mile	View from Baxter Pass Overlook of Project through BLM VRM Class IV land
244	Garfield County Road 201 (south of Baxter Pass)	Moderate-Long	Moderate	High		Travel Route/ Recreation	High	C197	✓				✓✓	0.1 mile	Travel route view of Project in parallel condition through BLM VRM Class III land. Access to Demaree Wilderness Study Area
312	Rabbit Valley Dispersed Campsite (McInnis Canyons National Conservation Area)	Long	Moderate	High		Recreation	High	C270	✓					1.4 mile	Recreation view of Project through BLM VRM Class IV land

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

		Concern Level Factors							Key Observation Point						
KOP ID	**Viewing Location Name**	**Viewing Duration**	**Volume of Use**	**Concern for Aesthetics**	**Scenic or Historic Status**	**Type of Use**	**Overall Concern Level**	**Link(s)**	**View from BLM/USFS Administered Land)**	**View of BLM/USFS Administered Land)**	**Other**	**National Significance**	**Simulation[1]**	**Distance from Project**	**KOP or Simulation Selection Rationale**
Utah															
Bureau of Land Management Vernal Field Office															
86	Utah State Route 45 (north of Bonanza)	Moderate	High	Moderate		Travel Route/ Recreation	Moderate	U242	✓					0.6 mile	Travel route view of the Project through BLM VRM Class III and IV land
87	Enron Recreation Area (on White River)	Long	Moderate	High		Recreation	High	U300	✓				✓✓	0.5 mile	Recreation (boat launch/take out) view of the Project crossing the White River through BLM Class III land
88	Fantasy Canyon	Long	Moderate	High		Recreation	High	U300	✓					1.0 mile	Recreation view of the Project through BLM VRM Class IV land from Fantasy Canyon (unique rock formation)
100	Dispersed residences along Utah State Route 88	Long	Moderate	High		Residential	High	U390		✓				1.3 miles	Dispersed residential view of the Project through BLMVRM Class III land
103	Dinosaur Diamond Scenic Byway (U.S. Highway 40 south of Bridgeland)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	U430			✓	✓		0.6 mile	Scenic byway views
105	Dispersed residences south of Duchesne	Long	Moderate	High		Residential	High	U430 U431			✓			2.0 miles	Dispersed residential views from cabin development
107	Ioka residential	Long	Moderate	High		Residential	High	U430			✓			0.3 mile	Residential views
108	Dinosaur Diamond Scenic Byway (U.S. Highway 40 southwest of Roosevelt)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	U410			✓	✓		1.4 miles	Scenic byway views
109	Dispersed residences south of Roosevelt	Long	Moderate	High		Residential	High	U410			✓		✓	0.2 mile	Dispersed residential views
110	Roosevelt residential	Long	Moderate	High		Residential	High	U410			✓			1.4 miles	Residential views
111	Bottle Hollow Reservoir	Long	Moderate	Moderate		Recreation	Moderate	U410			✓			0.9 mile	Recreation views
113	Utah State Route 88 (north of Leota)	Moderate	Moderate-High	Moderate		Travel Route/ Recreation	Moderate	U390	✓					1.4 miles	Travel route view of the Project through BLM VRM Class III land
200	Argyle Canyon Road	Moderate	Low-Moderate	Moderate		Travel Route	Moderate	U407, U413	✓				✓✓	0.1 mile	Travel route view of Project crossing BLM VRM Class III land
203	Fourmile Bottom	Moderate	Low-Moderate	High	Scenic	Recreation	High	U400	✓				✓✓	0.75 mile	Recreation views from Fourmile Bottom and Green River (Wild and Scenic River eligible) of the Project crossing through BLM VRM Class II land
268	U.S. Highway 40 Pullout (west of Fruitland)	Moderate	High	Moderate		Travel Route/ Recreation	Moderate	U426			✓			0.4 mile	Travel route pullout views
269	Fruitland residential	Long	Moderate	High		Residential	High	U426			✓		✓	0.3 mile	Residential views
270	Starvation Reservoir	Long	High	High		Recreation	High	U420			✓			2.4 miles	Recreation views
271	Bridgeland residential	Long	Moderate	High		Residential	High	U430			✓			0.2 mile	Residential views
272	Sand Wash North Destination Route	Moderate	Moderate	High		Travel Route/ Recreation	High	U400	✓				✓✓	1.0 mile	Travel route view of the Project through BLM Class IV land. Destination route to Sand Wash Rafting Launch for Desolation/Grey Canyon on Green River.

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

KOP ID	Viewing Location Name	Concern Level Factors						Link(s)	Key Observation Point				Simulation[1]	Distance from Project	KOP or Simulation Selection Rationale
		Viewing Duration	Volume of Use	Concern for Aesthetics	Scenic or Historic Status	Type of Use	Overall Concern Level		View from BLM/USFS Administered Land)	View of BLM/USFS Administered Land)	Other	National Significance			
273	Nine Mile Canyon Scenic Backway	Moderate-Long	Moderate-High	High	Scenic	Travel Route/ Recreation	High	U401	✓			✓		0.4 mile	Scenic backway view of the Project through BLM VRM Class III land
325	Argyle Canyon residences	Long	Moderate	High		Residential	High	U432			✓		✓✓	0.2 mile	Residential views
328	Indian Canyon Scenic Byway	Moderate-Long	High	High	Scenic	Travel Route/ Recreation	High	U520			✓✓		✓✓	0.4 mile	Scenic byway view of the Project in parallel condition
330	Dispersed residences north of Emma Park	Long	Moderate	High		Residential	High	U520			✓			0.4 mile	Residential views
Bureau of Land Management Moab Field Office															
145	Thompson Springs residential	Long	High	High		Residential	High	U486			✓			0.3 mile	Residential views
152	Interstate 70 Harley Dome Rest Area (Dinosaur Diamond Scenic Byway)	Long	High	Moderate-High	Scenic	Recreation	High	U490		✓		✓	✓✓	1.0 mile	Scenic byway overlook views of the Project through BLM VRM Class III land
193	Interstate 70 Crescent Junction Rest Stop (Dinosaur Diamond Scenic Byway)	Long	High	Moderate-High	Scenic	Recreation	High	U486		✓		✓	✓✓	1.0 mile	Scenic byway overlook views of the Project through BLM VRM Class III land
245	Old U.S. Highway 6 (west of Mack)	Moderate	Moderate	Moderate		Travel Route	Moderate	U490	✓					0.4 mile	Travel route view of the Project in a parallel condition through BLM VRM Class III land
246	Dinosaur Diamond Scenic Byway (I-70 east of Thompson Springs)	Moderate	High	Moderate-High	Scenic	Travel Route / Recreation	High	U490	✓			✓		0.5 mile	Scenic route view of the Project in parallel condition through BLM VRM Class III land
279	Old Spanish National Historic Trail (Near Thompson Springs Utah)	Long	Low	High	Historic	Recreation	High	U486	✓			✓	✓✓	0.7 mile	National Historic Trail view of the Project through BLM VRM Class III land
282	Interstate 70 Thompson Welcome Center (Dinosaur Diamond Scenic Byway)	Long	High	Moderate-High	Scenic	Recreation	High	U490	✓			✓	✓✓	1.2 miles	Recreation view of the Project through BLM Class III land
301	Arches National Park boundary (Salt Valley)	Long	Moderate	High		Recreation	High	U490		✓		✓		13.4 miles	Distant view of the Project through BLM Class III land from the boundary of Arches National Park
306	Upper Colorado River Scenic Byway	Moderate	High	High	Scenic	Travel Route / Recreation	High	U486		✓		✓	✓✓	0.6 mile	Scenic route view of the Project through BLM VRM Class II land
313	Dinosaur Diamond Scenic Byway (Interstate 70 crossing)	Moderate	High	Moderate-High	Scenic	Travel Route / Recreation	High	U487	✓					1.7 mile	Scenic route view of the Project through BLM Class III land
319	Green River	Long	Moderate	High		Recreation	High	U487		✓			✓✓	0.7 mile	River recreation view of the Project through BLM VRM Class II land
Bureau of Land Management Price Field Office															
26	Huntington State Park	Long	Moderate-High	High		Recreation	High	U498 U587			✓			3.8 miles	State Park recreation views
27	Huntington residential	Long	High	High		Residential	High	U628			✓			1.9 miles	Residential views
32	Cedar Mountain Overlook (San Rafael Swell)	Long	Moderate	High		Recreation	High	U729, U733	✓				✓✓	1.1 miles	Recreation view of the Project through BLM VRM Class III land
40	Dispersed residences northeast of Wellington	Long	Low	High		Residential	High	U492		✓				0.5 mile	Dispersed residential view of the Project through BLM Class IV land
41	Dinosaur Diamond Scenic Byway (U.S. Highway 6)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	U489	✓			✓	✓	0.2 mile	Scenic byway view of the Project through BLM VRM Class III land

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

KOP ID	Viewing Location Name	Concern Level Factors						Link(s)	Key Observation Point				Simulation[1]	Distance from Project	KOP or Simulation Selection Rationale
		Viewing Duration	Volume of Use	Concern for Aesthetics	Scenic or Historic Status	Type of Use	Overall Concern Level		View from BLM/USFS Administered Land)	View of BLM/USFS Administered Land)	Other	National Significance			
201	Crystal Geyser	Long	Low-Moderate	High		Recreation	High	U487		✓				0.3 mile	Recreation views of the Project through BLM VRM Class III land from a unique geologic formation. View of Project crossing Green River
207	Dispersed residences northeast of Castle Dale	Long	Low	High		Residential	High	U765			✓			0.7 mile	Dispersed residential views
208	West Helper residences	Long	High	High		Residential	High	U546		✓			✓✓	0.2 mile	Residential view of the Project through BLM VRM Class III land
213	Clear Creek residences	Long	Moderate	High		Residential	High	U600			✓			0.4 mile	Residential views
218	Wedge Overlook Scenic Backway	Moderate-Long	Moderate	High	Scenic	Travel Route/ Recreation	High	U731	✓			✓		0.6 mile	Scenic backway views of the Project through BLM VRM Class III land
255	Mexican Mountain Wilderness Study Area	Long	Low	High		Recreation	High	U730	✓					0.5 mile	Views from Wilderness Study Area of the Project through BLM VRM Class III land
256	Dinosaur Diamond Scenic Byway (U.S. Highway 6 east of Wellington)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	U494		✓		✓	✓	0.4 mile	Scenic travel route views of the Project through BLM VRM Class III land
257	Dispersed residences east of Wellington	Long	High	High		Residential	High	U494		✓				1.5 miles	Dispersed residential view of the Project on BLM Class III land
258	Martin residential	Long	High	High		Residential	High	U545 U546		✓				0.3 mile	Residential views of the Project through BLM VRM Class III land
259	Energy Loop Scenic Byway (Utah State Route 96)	Moderate	High	High	Scenic	Travel Route/ Recreation	High	U600			✓	✓		0.5 mile	Scenic byway views
274	Indian Canyon Scenic Byway (U.S. Highway191)	Moderate-Long	High	High	Scenic	Travel Route/ Recreation	High	U435			✓	✓	✓✓	0.3 mile	Scenic byway view of the Project in parallel condition
305	Wedge Overlook Scenic Backway	Moderate-Long	Moderate	High	Scenic	Travel Route/ Recreation	High	U732	✓			✓	✓✓	2.2 miles	Scenic backway views of the Project through BLM VRM Class III land
314	Little Grand Canyon Overlook	Long	Moderate	High		Recreation	High	U733	✓					5.1 miles	Distant recreation view of the Project through BLM VRM Class III land.
320	Junction of Road to Buckhorn Wash (Buckhorn Draw Road Scenic Backway)	Moderate-Long	Moderate	High	Scenic	Travel Route	High	U732	✓				✓✓	0.7 mile	Scenic backway view of the Project through BLM VRM Class III land
322	U.S. Highway 6 Rest Area (Dinosaur Diamond Scenic Byway)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	U489	✓			✓	✓✓	1.0 mile	Rest area view of the Project through BLM VRM Class IV land
323	Old Railroad Grade (adjacent to Mexican Mountain Wilderness Study Area)	Moderate-Long	Low-Moderate	High		Travel route	High	U730	✓				✓	0.2 mile	Travel route view along historic railroad grade of the Project through BLM VRM Class III land
324	Dinosaur Diamond Scenic Byway (U.S. Highway 6 north of Woodside)	Moderate	High	Moderate-High	Scenic	Travel Route/ Recreation	High	U489	✓			✓	✓✓	0.6 mile	Travel route view of the Project through BLM VRM Class III land
326	San Rafael Swell Destination Route (Green River Cutoff Road)	Moderate	Moderate	High		Travel Route	High	U734	✓					0.1 mile	Travel route view of the Project through BLM VRM Class III lands
Bureau of Land Management Salt Lake Field Office															
22	Soldier Summit	High	Low	High		Residential	High	U530			✓			0.5 mile	Residential views
266	U.S. Highway 6 (Spanish Fork Canyon)	Moderate	High	Moderate		Travel Route	Moderate	U460			✓		✓✓	1.5 mile	Travel route views
Bureau of Land Management Richfield Field Office															

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

KOP ID	Viewing Location Name	Concern Level Factors						Link(s)	Key Observation Point				Simulation[1]	Distance from Project	KOP or Simulation Selection Rationale
		Viewing Duration	Volume of Use	Concern for Aesthetics	Scenic or Historic Status	Type of Use	Overall Concern Level		View from BLM/USFS Administered Land)	View of BLM/USFS Administered Land)	Other	National Significance			
205	Fountain Green residential	Long	High	High		Residential	High	U631		✓				1.5 miles	Residential view of the Project through BLM VRM Class III land
206	Dispersed residences north of Mount Pleasant	Long	Low	High		Residential	High	U630			✓			0.4 mile	Dispersed residential views
212	Fairview residential	Long	Moderate	High		Residential	High	U600 U636			✓			1.1 mile	Residential views
261	Fairview residential	Long	High	High		Residential	High	U600 U636			✓		✓✓	1.7 miles	Residential views
262	Mount Pleasant dispersed residences	Long	Low	High		Residential	High	U630			✓		✓✓	0.3 mile	Dispersed residential views
263	Mount Pleasant residential	Long	High	High		Residential	High	U630			✓			1.1 mile	Residential views
264	Big Hollow Wildlife Management Area Destination Route (Fountain Green)	Moderate-Long	Moderate	Moderate		Travel Route	Moderate	U631		✓				0.6 mile	Travel route view of the Project through BLM VRM Class III land
Bureau of Land Management Fillmore Field Office															
131	Mount Nebo Loop Scenic Byway	Moderate-Long	High	High	Scenic	Travel Route/ Recreation	High	U639			✓	✓		0.5 mile	Scenic byway views
204	Nephi residential	Long	High	High		Residential	High	U650			✓			0.2 mile	Residential views
214	Utah State Route 132 (north of Fountain Green)	Moderate	High	Moderate		Travel Route	Moderate	U639		✓				0.5 mile	Travel route view of the Project through BLM VRM Class IV land
215	Mona residential	Long	High	High		Residential	High	U640		✓				2.0 miles	Residential view of the Project through BLM VRM Class III land
265	Interstate 15 (Nephi)	Short	High	Low-Moderate		Travel Route	Moderate	U650			✓		✓✓	0.3 mile	Travel route views
Ashley National Forest															
315	Sowers Canyon Road	Long	Low-Moderate	Moderate-High		Travel Route	Moderate	U431	✓					0.1 mile	Travel route view of the Project in a parallel condition through USFS Modification VQO
327	Avintaquin Campground	Long	Moderate	High		Recreation	High	U513	✓					0.4 mile	Recreation view of the Project through USFS Retention VQO
329	Reservation Ridge Scenic Backway	Moderate-Long	Moderate	High	Scenic	Travel Route/ Recreation	High	U515	✓					0.4 mile	Travel route view of the Project in a parallel condition through USFS Partial Retention VQO
Manti-La Sal National Forest															
28	Fairview Lakes Overlook (Energy Loop Scenic Byway)	Long	High	High	Scenic	Recreation	High	U600	✓			✓		2.8 miles	Recreation view of the Project through USFS Partial Retention VQO
30	Electric Lake	Long	Moderate	Moderate		Recreation	Moderate	U600	✓					1.7 miles	Recreation view of the Project through USFS Partial Retention VQO
36	Birdseye residential	Long	Moderate	High		Residential	High	U621		✓				0.9 mile	Residential view of the Project through USFS Partial Retention VQO
194	Potters Ponds	Long	Moderate	High		Recreation	High	U630	✓					0.6 mile	Recreation view of the Project through USFS Partial Retention and Modification VQO
195	Indian Creek Campground	Long	Moderate	High		Recreation	High	U630	✓				✓✓	0.3 mile	Recreation view of the Project through USFS Modification and Partial Retention VQO

TABLE N-1
KEY OBSERVATION POINTS AND SIMULATION LOCATIONS

		Concern Level Factors							Key Observation Point						
KOP ID	**Viewing Location Name**	**Viewing Duration**	**Volume of Use**	**Concern for Aesthetics**	**Scenic or Historic Status**	**Type of Use**	**Overall Concern Level**	**Link(s)**	**View from BLM/USFS Administered Land)**	**View of BLM/USFS Administered Land)**	**Other**	**National Significance**	**Simulation[1]**	**Distance from Project**	**KOP or Simulation Selection Rationale**
196	Fairview Lakes residential	Long	High	High		Residential	High	U600		✓				1.4 miles	Residential view of the Project through USFS Partial Retention VQO
217	Skyline Drive Scenic Backway	Moderate-Long	High	High	Scenic	Travel Route/ Recreation	High	U630	✓			✓	✓✓	0.3 mile	Scenic route view of the Project through USFS Partial Retention VQO
260	Energy Loop Scenic Byway (Utah State Route 31)	Moderate	High	High	Scenic	Travel Route/ Recreation	High	U600	✓			✓	✓✓	0.3 mile	Scenic byway view of the Project through USFS Partial Retention VQO
283	Energy Loop Scenic Byway (Utah State Route 31)	Moderate	High	High	Scenic	Travel Route/ Recreation	High	U600			✓	✓		0.5 mile	Scenic byway views
284	Energy Loop Scenic Byway (Utah State Route 264)	Moderate	High	High	Scenic	Travel Route/ Recreation	High	U600		✓		✓	✓✓	0.5 mile	Scenic byway view of the Project through USFS Partial Retention VQO
307	Energy Loop Scenic Byway (Utah State Route 264)	Moderate	High	High	Scenic	Travel Route/ Recreation	High	U600	✓			✓		0.6 mile	Scenic byway view of the Project through USFS Partial Retention VQO.
308	Millers Flat Road	Moderate-Long	Moderate	High		Travel Route/ Recreation	High	U630	✓					0.8 mile	Recreation destination route view of the Project through USFS Modification VQO.
309	Bear Creek Campground	Long	Moderate	High		Recreation	High	U629		✓			✓	2.2 miles	Recreation view of the Project through USFS Partial Retention VQO.
Uinta-Wasatch-Cache National Forest															
216	U.S. Highway 6 (west of Soldier Summit)	Moderate	High	Moderate		Travel Route	Moderate	U533, U535	✓					0.3 mile	Travel route view of the Project through USFS Partial Retention VQO
267	Battle Flats Recreation Area (Strawberry Reservoir)	Long	High	High		Recreation	High	U424	✓					1.9 miles	Recreation views
285	Aspen Grove Campground	Long	Moderate-High	High		Recreation	High	U424	✓				✓✓	0.4 mile	Recreation views
304	Sheep Creek Road (Forest Road 042)	Moderate	Moderate	Moderate-High		Travel Route/ Recreation	Moderate	U428, U429, U433	✓				✓✓	0.4 mile	Recreation destination route view of the Project through USFS Partial Retention VQO

NOTES:

[1] ✓ = direct effect simulation only; ✓✓ = direct and cumulative effect simulation

BLM = Bureau of Land Management

KOP ID = Key Observation Point Identification

USFS = U.S. Forest Service

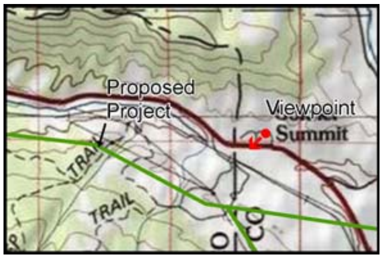
VQO = Visual Quality Objective (USFS)

VRM = Visual Resource Management (BLM)

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	Salt Lake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 10S	Location Sketch
Key Observation Point # 22 Soldier Summit	Range: 7E	
VRM Class/VQO: n/a	Section: 24	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling, domed, smooth	Diverse, numerous amorphous patches	Vertical, geometric
Line	Smooth, angular, simple	Butt and diffuse edges	Vertical, diagonal, weak concave/horizontal
Color	Tans	Dark greens, sage greens, tans, seasonal variety	Grays, browns
Texture	Medium grain	Medium to coarse grain	Ordered, medium grain, dense

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		▨					▨			▨		
Elements: Line			▨				▨			▨		
Elements: Color			▨				▨			▨		
Elements: Texture			▨				▨			▨		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

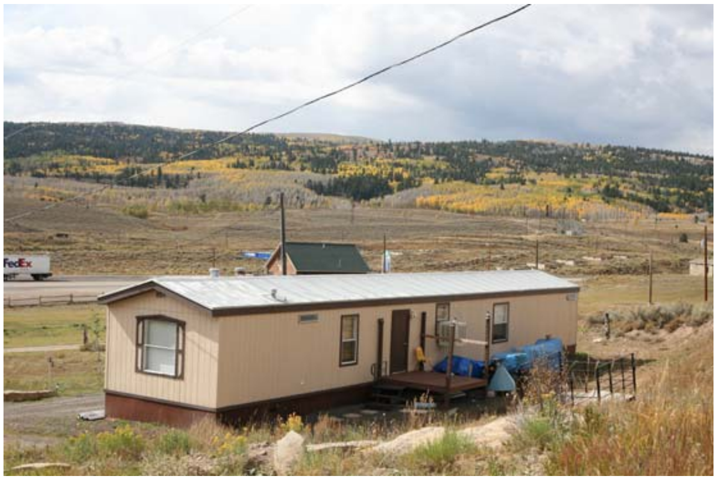
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	Salt Lake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

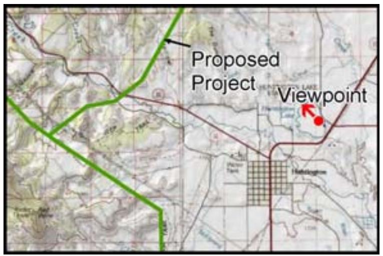


View southwest from residences in Soldier Summit, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting associated with residences in Soldier Summit, Utah. The proposed Project would be seen from a level position in a backdropped condition through rolling terrain. Disturbance associated with construction access and tower pads would weakly contrast with existing landform and vegetation characteristics since the proposed Project would be viewed in context with other landscape modifications. The proposed structures and conductors would be seen 0.5 mile away and would have moderate contrast with structural elements of form, line, color, and texture as the proposed Project would be seen with other structures and modifications in this landscape.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 17S	Location Sketch
Key Observation Point # 26 Huntington State Park	Range: 9E	
VRM Class/VQO: n/a	Section: 17	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Prominent, bold, rugged; level, horizontal	Amorphous patches, stippled areas, band of vegetation along reservoir	Vertical, geometric
Line	Angular, complex, jagged; horizontal, smooth	Butt, digitate, and diffuse edges, vertical, indistinct in valley	Vertical, angular
Color	Grays, tans, browns, reds, blues, reflective	Dark greens, sage greens, tans	Gray, transparent, reflective, white
Texture	Fine to coarse grain	Fine to medium grain	Fine to medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin, triangular
Line	n/a	n/a	Vertical/diagonal; thin/weak concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨			▨	
	Line				▨				▨			▨	
	Color				▨				▨			▨	
	Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

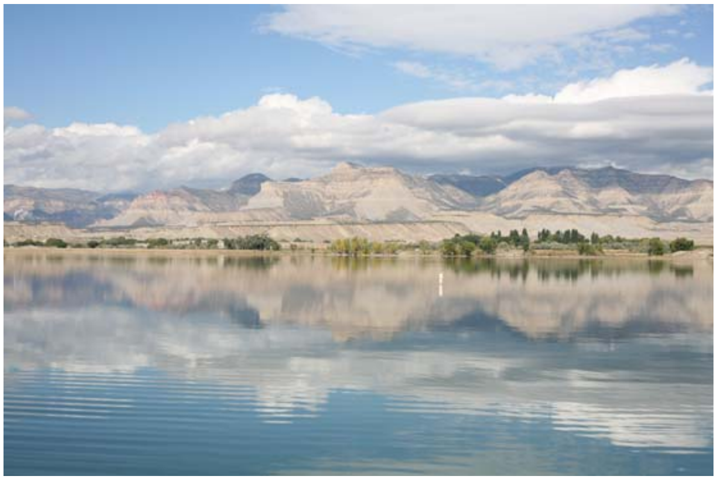
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from dock at Huntington State Park

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape viewed from the dock at the Huntington State Park. The proposed Project would cross relatively flat to slightly rolling terrain and would be backdropped by the Wasatch Plateau. Disturbance associated with construction access and vegetation clearing would not be visible from the KOP due to topographic screening. The proposed structures would be located approximately 4 miles away, beyond two existing 345kV transmission lines, and would be mostly screened by topography. Therefore, structure contrast was assessed to be weak from this viewpoint.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

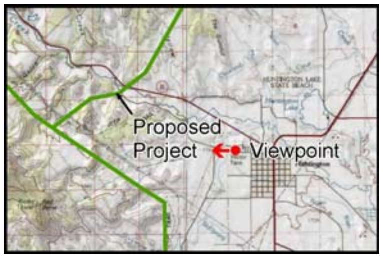
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
27 Huntington residential

VRM Class/VQO:
n/a

Location:
Township: 17S
Range: 8E
Section: 24

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Prominent, bold, rugged (Wasatch Plateau); level, horizontal (valley)	Amorphous patches, stippled areas	Vertical, geometric, rectangular (homes)
Line	Angular, complex, jagged (Wasatch Plateau); horizontal, smooth (valley)	Butt and diffuse edges, indistinct in valley	Vertical, angular
Color	Grays, tans, browns, reds	Dark greens, tans	Gray, transparent, reflective, white
Texture	Fine (valley) to coarse (Wasatch Plateau) grain	Fine to medium grain	Fine to medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

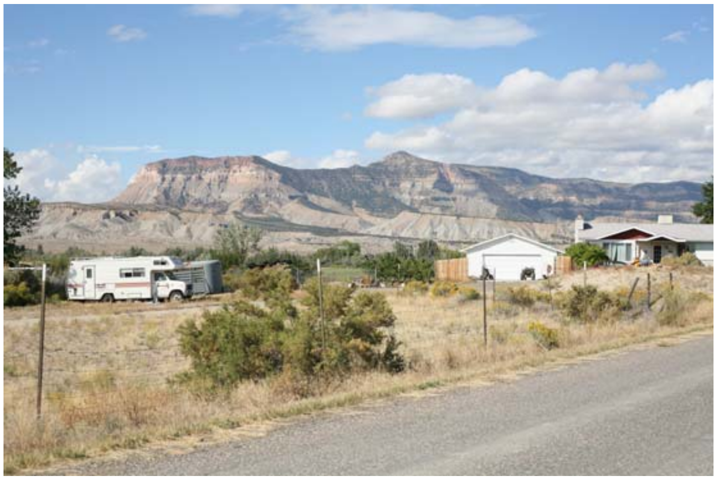
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



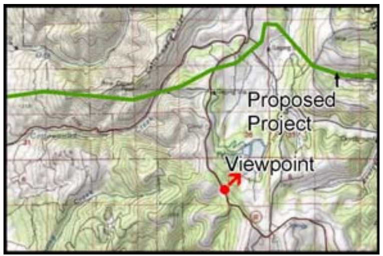
View west from residences in Huntington, Utah

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting viewed from residences in Huntington, Utah. The proposed Project would cross relatively flat to slightly rolling terrain and would be backdropped by adjacent terrain. Disturbances associated with the construction of access roads and right-of-way vegetation clearing would be mostly screened from this KOP. Where visible, these project components would weakly contrast with the existing landscape character. The proposed structures would be seen approximately 2 miles away beyond three existing 345kV transmission lines. Due to the presence of multiple existing transmission lines, structure contrast was assessed to be at a weak level.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 28 Fairview Lakes Overlook-The Energy Loop Scenic Byway	Township: 14S Range: 5E	
VRM Class/VQO: Partial Retention	Section: 2	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Wide trough-shaped, rolling, rounded	Amorphous patches, distinct, vertical, complex, pyramidal	Low, geometric
Line	Continuous, curving, horizontal, diagonal	Flowing, complex, irregular, butt edges	Angular, vertical
Color	Tans, grays, blue	Vivid, greens, tans, seasonal variety	Greens, browns, whites
Texture	Fine to medium grain	Medium to coarse grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Thin, vertical
Line	Geometric, curvilinear	Angular, butt edge	Thin vertical
Color	Tans	Tans, gray-green	Dull gray
Texture	Fine grain	Fine to medium grain	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■					■	
	Line		■				■					■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

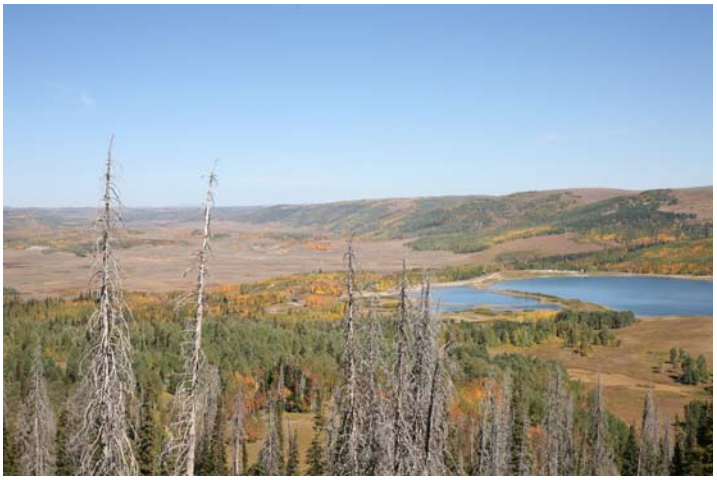
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Fairview Lakes Overlook, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting designated by the Manti-La Sal National Forest as a partial retention VQO as viewed from the Fairview Lakes Overlook. The proposed Project would traverse moderately steep terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access and right-of-way vegetation clearing would produce weak/moderate landscape contrast through the development of geometric forms and curvilinear lines incongruent with the existing landscape character. The proposed structures would be seen approximately 3 miles away from this KOP and due to the distance of these views, the structures would introduce a weak contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

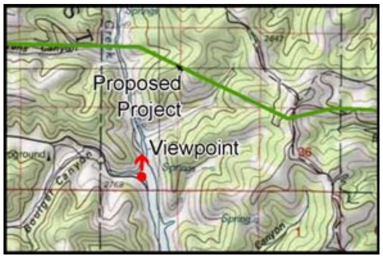
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 30 Electric Lake

VRM Class/VQO:
Partial Retention

Location:
Township: 13S
Range: 6E
Section: 34

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous, horizontal	Flowing, complex, irregular, background butt edge (right-of-way)	n/a
Color	Tans, blues, reflective	Vivid, tans, greens, gray-green, white	n/a
Texture	Smooth surface on reservoir, medium grain	Coarse, stippled, scattered	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, horizontal	Horizontal, butt edge	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■				■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■			■				■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

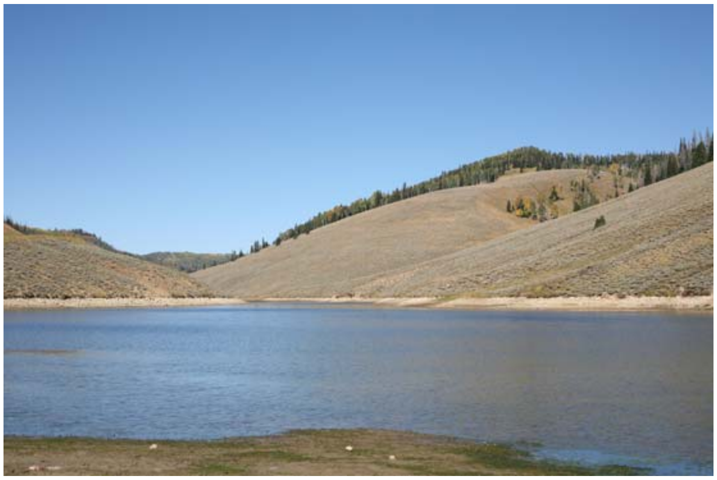
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

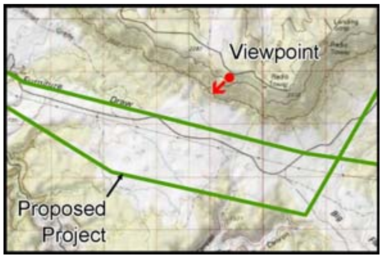


View north from Electric Lake recreation area, Utah

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated as a partial retention VQO by the Manti-La Sal National Forest as seen from Electric Lake. The proposed Project would cross moderately steep terrain with views partially screened by topography. Disturbance associated with construction access would generally be screened by vegetation except near the top of the slope where the cleared right-of-way would be visible as well as construction access. The proposed structures would be seen approximately 1.5 miles away and would be skylined since the proposed Project is located on the top of the ridgeline before descending into a side canyon.

VISUAL CONTRAST RATING WORKSHEET

Date: 10/4/2011
BLM Field Office/National Forest: Price Field Office
Resource Area:
Activity (program): 500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 32 Cedar Mountain Overlook	Township: 19S Range: 12E	
VRM Class/VQO: III	Section: 18	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Simple, rolling, flat to bold, definite, V-shaped canyons	Amorphous patches and stippled areas	Vertical, geometric
Line	Simple to complex, bold, horizontal, diagonal, vertical	Weak, diffuse and butt edges	Thin, vertical
Color	Light tans, browns, reds	Juniper greens, tans	Brown
Texture	Fine to rough grain	Medium grain	Fine grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, regular	Vertical/diagonal; thin concave (conductors)
Color	Light tans, browns, reds	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■			■				■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

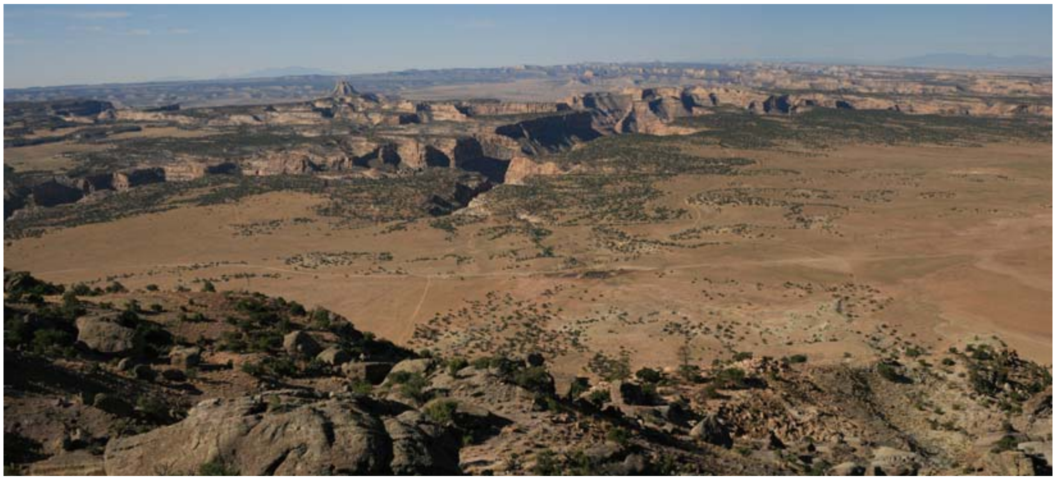
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

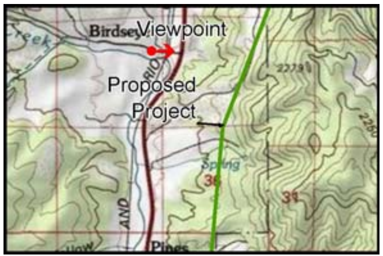


View southwest from Cedar Mountain Overlook, UT

Moderate contrast would result from the construction and operation of the proposed Project, within a panoramic landscape designated as VRM Class III viewed from the Cedar Mountain Overlook. The proposed Project crosses flat to gently rolling terrain and would be backdropped due to the superior view from the overlook. Disturbance associated with construction access would introduce curvilinear lines and geometric forms similar to the disturbances associated with the existing transmission line. Vegetation clearing would be mostly limited to tower pads and access roads which due to the superior viewing position, would produce distinct geometric forms. The proposed structures would be seen at approximately 1 mile and are adjacent to an existing 345kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 36 Birdseye residential	Township: 10S Range: 3E	 Birdseye Viewpoint Proposed Project Spring 36 31 Pines
VRM Class/VQO: Partial Retention	Section: 26	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, prominent, rugged	Dense to scattered vegetation, amorphous clearings	Vertical, geometric
Line	Diagonal, undulating, bold	Diffuse edges	Vertical/diagonal; thin/weak concave (conductors)
Color	Reds, tans	Light and dark greens	Dull gray, transparent
Texture	Medium to coarse grain	Fine to medium grain	Uniform medium grain, medium to sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin, triangular
Line	Curvilinear, geometric	Horizontal, butt edge	Vertical/diagonal; thin/weak concave (conductors)
Color	Reds, tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform medium grain, medium to sparse density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■				■				■		
Elements: Line		■				■					■	
Elements: Color			■				■				■	
Elements: Texture			■				■				■	

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

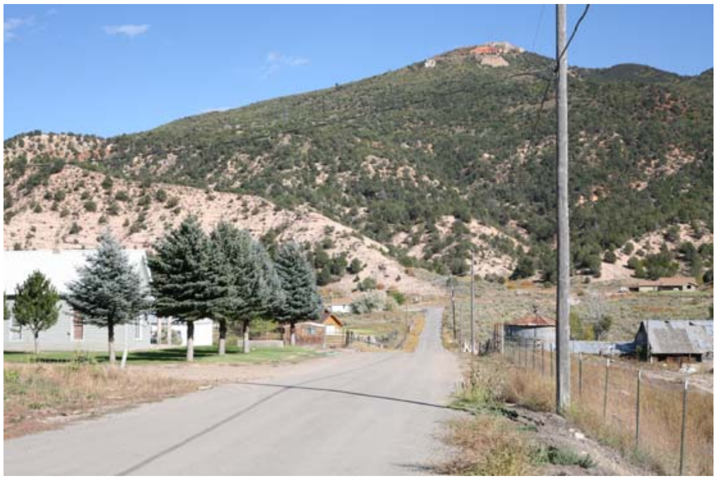
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View east from Birdseye Road adjacent to residences, Utah

Weak-moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape designated by the Manti-La Sal NF as a partial retention VQO as viewed from residences in Birdseye. The proposed Project would cross steep terrain and include right-of-way clearing producing geometric forms which would be more dominant than the vegetation clearing associated with the existing transmission line. Disturbance associated with construction access would also produce geometric forms as well as curvilinear lines that are incongruent with the existing landscape. The proposed structures would be seen 0.9 mile away and would produce a weak/moderate structure contrast due to the adjacent existing 345kV transmission line. Selective mitigation measure #3 (minimize cut and fill) and #4 (minimize tree clearing) would be applied to reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/12/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

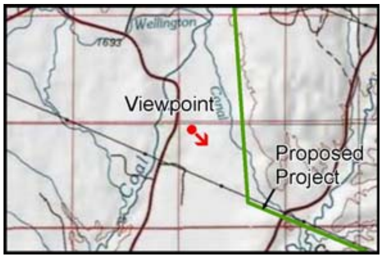
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
40 Dispersed residences northeast of Wellington

VRM Class/VQO:
IV

Location:
Township: 14S
Range: 11E
Section: 34

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Geometric plateaus, level	Indistinct, patches, stippled	Geometric, low
Line	Horizontal, broken diagonal	Indistinct	Vertical, diagonal
Color	Tans	Gray-greens, tans	White, gray
Texture	Fine to medium grain	Medium grain	Medium grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Tans, reds, light brown	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨		▨			
	Line			▨				▨		▨			
	Color			▨				▨		▨			
	Texture			▨				▨		▨			

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

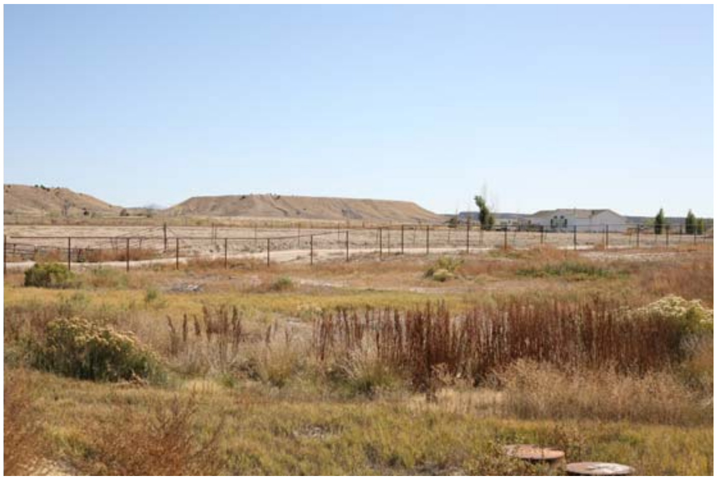
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/12/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast from residences northeast of Wellington, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting with a VRM Class IV designation associated with views from residences northeast of Wellington. The proposed Project would cross flat to gently rolling terrain and be viewed in a partially backdropped condition from a level viewing position. Earthwork associated with the construction of access roads as well as right-of-way clearing would be mostly screened but where visible, would produce geometric forms and curvilinear lines. The proposed structures would be seen at approximately 0.5 mile from these residences. Since there are no adjacent major existing structural elements in the landscape, the proposed structures would introduce strong structure contrast and would dominate views from these residences.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

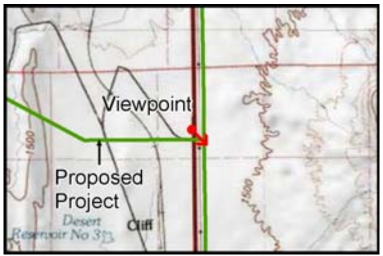
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 41 Dinosaur Diamond Scenic Byway (U.S. Highway 6)

VRM Class/VQO:
III

Location:
Township: 19S
Range: 14E
Section: 3

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Flat, smooth BG: Bold vertical, horizontal, rugged	FG: Short, patchy BG: Few, stippled	Vertical, geometric
Line	FG: Horizontal BG: Horizontal banding, diagonal,	FG: Angular, broken, diffuse edges BG: Weak diffuse, indistinct	Vertical, horizontal; concave (conductors)
Color	FG: Tans, beiges BG: Tans, grays, reds	FG: Gray-greens, dull BG: Juniper greens	Brown
Texture	FG: Fine grain BG: Banded, course grain	FG: Even, medium grain BG: Fine to medium grain	Medium grain, dense, ordered, repeating

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Tans, beiges	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			▨				▨		▨			
Elements: Line			▨				▨		▨			
Elements: Color			▨				▨			▨		
Elements: Texture			▨				▨			▨		

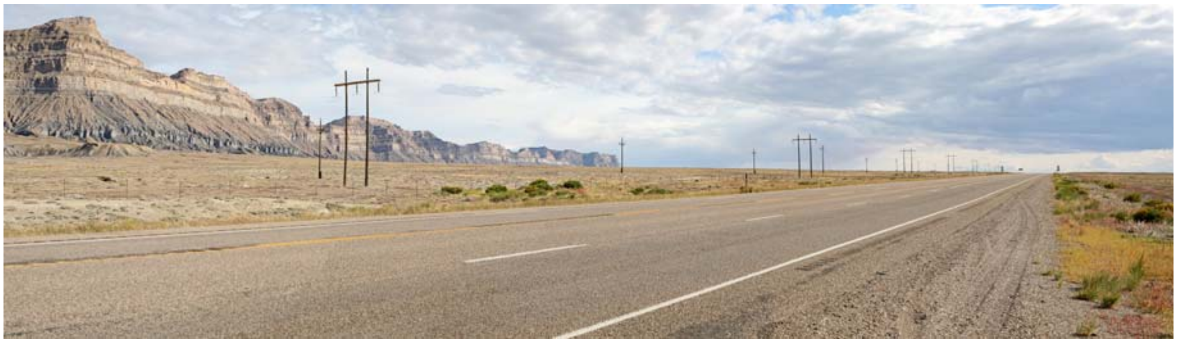
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



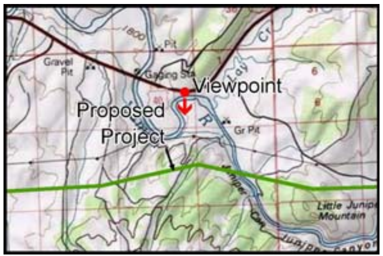
View southeast from Dinosaur Diamond Scenic Byway (U.S. Highway 6), Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project, within a panoramic landscape designated by the BLM as VRM Class III and viewed from U.S. Highway 6. The proposed Project crosses flat to gently rolling terrain and would be mostly skylined due to proximity to the viewer. Construction access would introduce curvilinear lines and geometric forms into the landscape. Vegetation clearing in the right-of-way would be minimal and if seen, would introduce weak geometric forms slightly contrasting with existing vegetation patterns. The proposed structures would be seen directly adjacent to the road in context with a smaller, 138kV transmission line and due to the long duration view, would introduce a moderate/strong structure contrast. To further mitigate contrast on views from this scenic highway, the proposed Project would need to be located further to the east which would place it outside of the designated utility corridor.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 50 Maybell residential	Township: 6N Range: 95W	
VRM Class/VQO: III	Section: 2	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Moderately rolling to slightly concave, blocky, pyramidal	Amorphous patches, stippled	Vertical, geometric, triangular
Line	Horizontal, diagonal	Irregular butt and diffuse edges	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans, browns, grays, reds	Greens yellow, tan	Dull gray, transparent, browns
Texture	Fine to medium grain	Fine to medium grain	Repeating medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric tower pads and access through moderately steep side slope	Geometric clearings with reestablished low vegetation, most	Vertical, geometric, triangular
Line	Horizontal, diagonal	Horizontal and diagonal butt edges created at clearing through pinyon-	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Browns	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨			▨					▨	
	Line			▨			▨					▨	
	Color			▨				▨				▨	
	Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

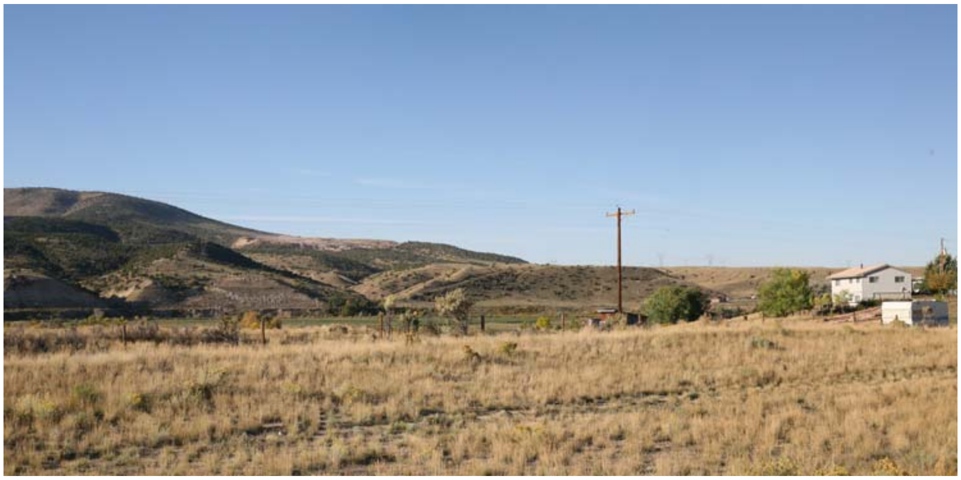
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



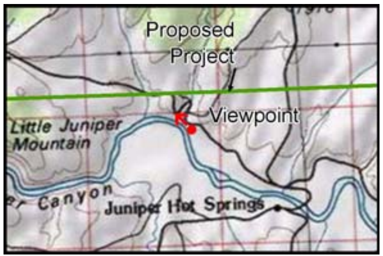
View south from U.S. Highway 40, Colorado

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape associated with dispersed residences along U.S. Highway 40 near Maybell, Colorado. The proposed Project would traverse dissected, sloping terrain in both a backdropped and skylined condition. Construction access and tower pad disturbance would weakly contrast with existing landform characteristics since access for the existing transmission lines and surface mining operations both occur within this view. Weak/moderate contrast with existing vegetation patterns would occur where right-of-way clearing through pinyon-juniper vegetation would create geometric forms. Weak structure contrast would be generated since the proposed Project would be viewed beyond an existing 345kV and 138kV transmission line. To further reduce contrast on views from these residences, selective mitigation measure #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 51 Juniper Canyon Recreation Area	Township: 6N Range: 94W	
VRM Class/VQO: III	Section: 17	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, meandering to blocky/pyramidal	Mottled/stippled to amorphous patch, strip, clumped groupings	Geometric, vertical
Line	Horizontal, diagonal	Indistinguishable, diffuse and butt edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, browns	Greens, yellows, reds, sage	Grays, browns
Texture	Fine to medium grain	Fine to medium grain	Repeating medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Minimal disturbance from geometric clearings for tower pads	Geometric areas of reestablished low growing vegetation	Vertical, rhythmic; geometric/triangular
Line	Diagonal, horizontal	Horizontal, diagonal butt edge created at clearings for tower pads	Vertical/diagonal, horizontal; concave (conductors)
Color	Tan	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■			■		
Line		■				■				■		
Color			■				■			■		
Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

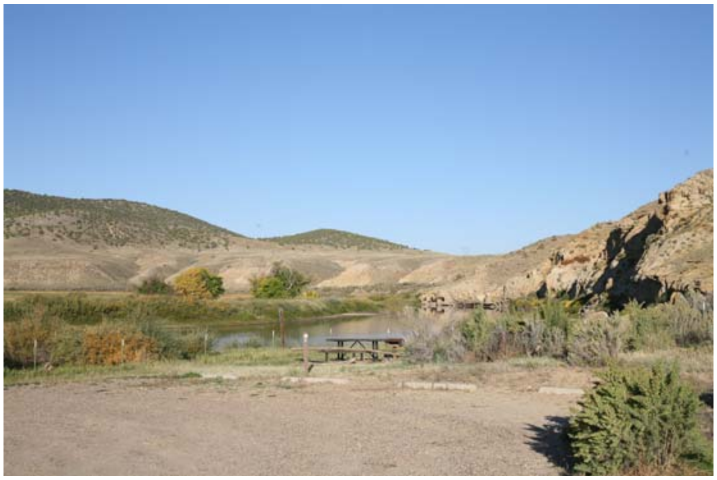
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from Juniper Canyon Recreation Area, Colorado

Moderate contrast would result from the construction and operation of the proposed Project within a feature landscape setting with VRM Class III designation and associated with the Juniper Canyon Recreation Area. The proposed Project would be viewed from an inferior position as it traverses through rolling terrain in a skylined condition. Disturbance associated with construction access and tower pads would have moderate contrast with existing landform and vegetation features as the new access and right-of-way clearing would be visible in rolling terrain. Moderate structure contrast would occur where recreationists would have unobstructed views of the structures and conductors skylined above the horizon. Two existing transmission lines are viewed in a partially screened condition beyond the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	2/7/2012
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

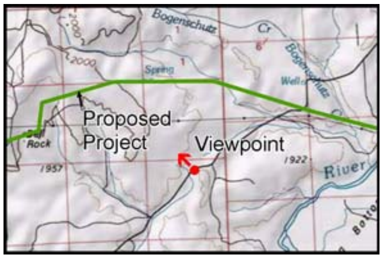
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 52 Dispersed residences southwest of Craig

VRM Class/VQO:
n/a

Location:
Township: 6N
Range: 92W
Section: 13

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently sloping, rolling	Low, amorphous and geometric patches, tall clumping	Vertical, thin, triangular
Line	Undulating horizontal, diagonal	Straight diagonal and horizontal butt edges	Vertical/diagonal; thin/weak concave (conductors)
Color	Browns, tans	Variations of greens, tans, yellow	Dull gray, transparent
Texture	Fine grain	Fine to coarse grain	Uniform coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat, horizontal	Low, flat	Vertical, thin, triangular
Line	Curvilinear, horizontal	Regular, butt edge	Vertical/diagonal; thin/weak concave (conductors)
Color	n/a	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■				■	
Line			■				■				■	
Color			■				■				■	
Texture			■				■				■	

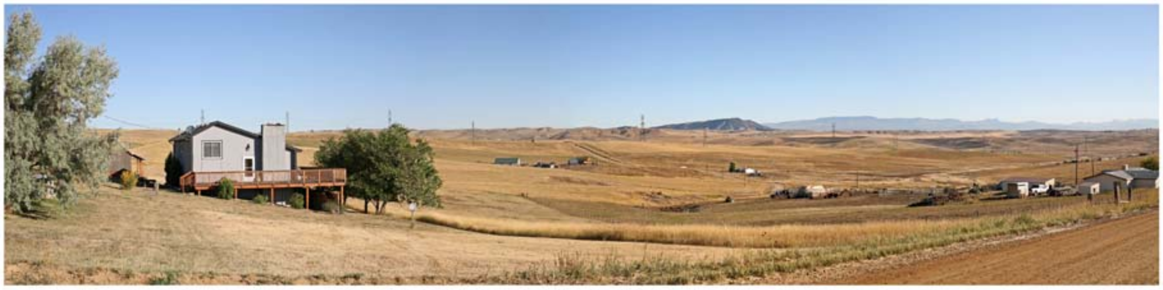
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	2/7/2012
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



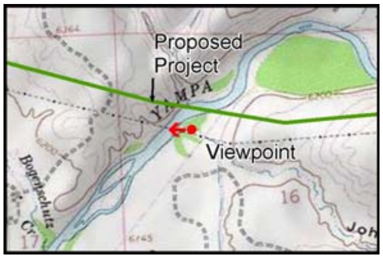
View northwest from Moffat County Road 30 (Round Bottom Road), Colorado

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape associated with dispersed residences along Moffat County Road 30, west of Craig, Colorado. The proposed Project would cross rolling terrain in a backdropped condition. Earthwork associated with the construction of access roads and right-of-way clearing would be mostly screened but where visible, would produce geometric forms and curvilinear lines in the landform and vegetation. The proposed structures and conductors would be seen at approximately 1 mile with existing structures of similar scale and size visible in front of the proposed Project. The proposed Project would introduce weak structure contrast due to the dominance of the existing transmission lines.

VISUAL CONTRAST RATING WORKSHEET

Date:	2/7/2012
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 6N	Location Sketch
Key Observation Point # 54 South Beach Recreation Area	Range: 91W	
VRM Class/VQO: n/a	Section: 16	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, meandering to blocky	Mottled/stippled, strip, clumped groupings	Bold, vertical; complex geometric/triangular
Line	Horizontal, diagonal	Indistinguishable to butt edge (at river)	Vertical/diagonal; thin concave (conductors)
Color	Tans, browns, reds	Greens, yellows, reds, sage	Dull gray, transparent
Texture	Fine to medium grain	Fine to coarse grain	Coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical; complex, triangular, geometric
Line	n/a	n/a	Diagonal, horizontal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨		▨		
	Line				▨				▨			▨	
	Color				▨				▨			▨	
	Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

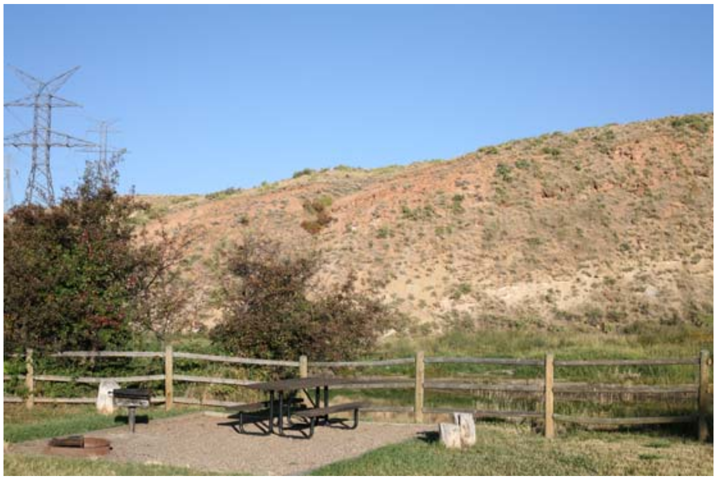
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	2/7/2012
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



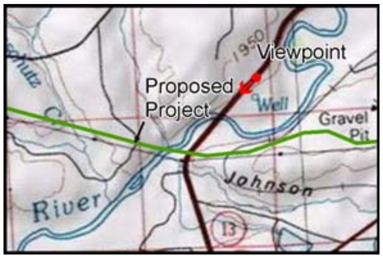
View west from South Beach Recreation Area, Yampa River, Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting associated with the South Beach Recreation Area along the Yampa River. The proposed Project would be seen from an inferior viewing position as it crosses over elevated terrain in a skylined condition. Disturbance associated with construction access and tower pads would not be visible from this KOP. The proposed structures and conductors would be seen directly adjacent to the recreation area and would have weak/moderate contrast due to the presence of two existing 345kV transmission lines.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 6N	Location Sketch
Key Observation Point # 56 Colorado State Highway 13 (south of Craig)	Range: 91W	
VRM Class/VQO: n/a	Section: 9	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently sloping, rolling, geometric/blocky	Low, amorphous geometric patches, concentrated thick band	Vertical, rhythmic and diminishing; geometric/triangular
Line	Strong diagonal, straight and undulating horizontal	Butt edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans grays	Variations of greens, tans, yellows, reds	Grays, browns, white
Texture	Fine to medium grain	Fine to coarse grain	Repeating coarse to medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Minimal disturbance for geometric tower pads and access roads	Thin horizontal patch of reestablished vegetation at tower	Vertical, rhythmic and diminishing; geometric/triangular
Line	Thin, horizontal	Horizontal butt edge created at clearings	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
Degree of Contrast		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

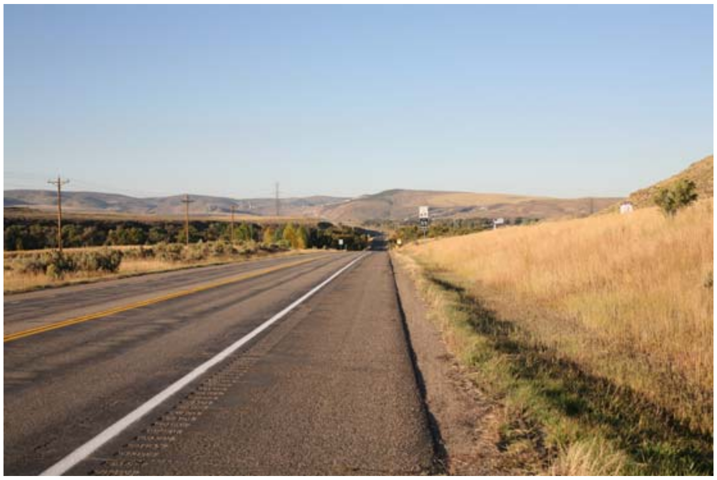
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



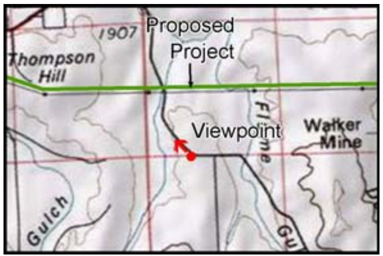
View southwest from Colorado State Highway 13

Weak contrast would result form the construction and operation of the proposed Project in a modified, panoramic landscape setting. The proposed Project would cross through rolling terrain as viewed from Colorado State Highway 13, near Craig, from a level view. Disturbance to landform and vegetation associated with construction access would introduce weak contrast with existing features. Weak structure contrast would occur from the introduction of the structures and conductors in this landscape since the proposed Project parallels similar structures. To reduce contrast, selective mitigation measure #8 (match tower spans) would be applied to decrease the visual space occupied by the transmission structures when viewed in context with the existing transmission lines.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 58 Dispersed residences south of Craig	Township: 6N Range: 90W	
VRM Class/VQO: n/a	Section: 18	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently sloping, rolling	Low, amorphous geometric patches	Vertical, rhythmic and diminishing; geometric/triangular
Line	Gently curving horizontal	Strong geometric lines created by grazing development	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Browns	Variations of greens, tans, sage, reds	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing medium grain, medium density

Degree of Contrast

Degree of Contrast		Features: Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

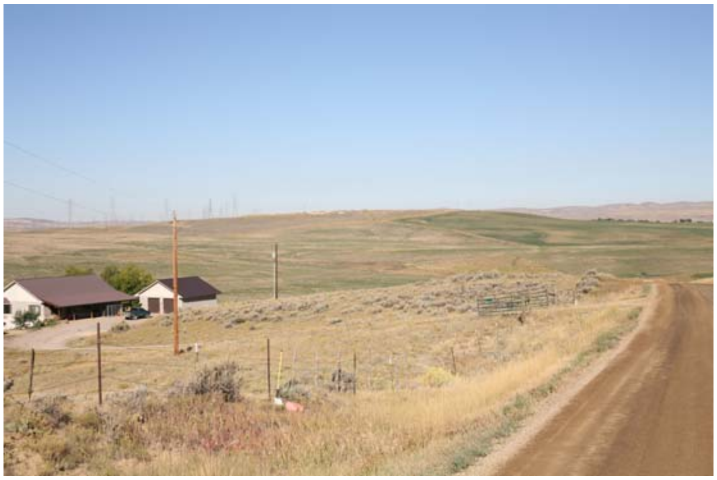
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from Moffat County Road 35

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape associated with dispersed residences along Moffat County Road 35. The proposed Project would cross rolling terrain in backdropped and skylined conditions. Earthwork associated with the construction of access roads and right-of-way clearing would be mostly screened but where visible, would produce geometric forms and curvilinear lines in the landform and vegetation components of contrast. The proposed structures and conductors would be seen at approximately 1 mile in context with existing transmission lines of similar scale and size, and therefore, would introduce weak structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

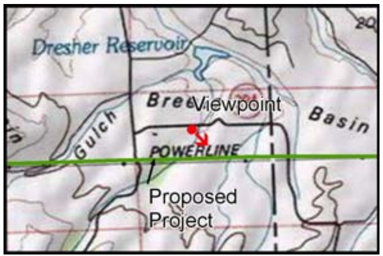
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
59 Dispersed residences southeast of Craig

VRM Class/VQO:
n/a

Location:
Township: 6N
Range: 90W
Section: 13

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently sloping, rolling	Low, amorphous and geometric patches	Thin vertical, rectangular
Line	Gently curving horizontal	Butt diagonal and horizontal edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns	Variations of greens, tans, yellows	Brown
Texture	Fine grain	Fine to medium grain	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Minimal disturbance for geometric clearings for tower pads and access	Geometric patches of low reestablished vegetation	Vertical, rhythmic; complex, triangular, geometric
Line	Diagonal, horizontal	Diagonal and horizontal butt edges at clearings	Diagonal, horizontal; concave (conductors)
Color	Tans	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

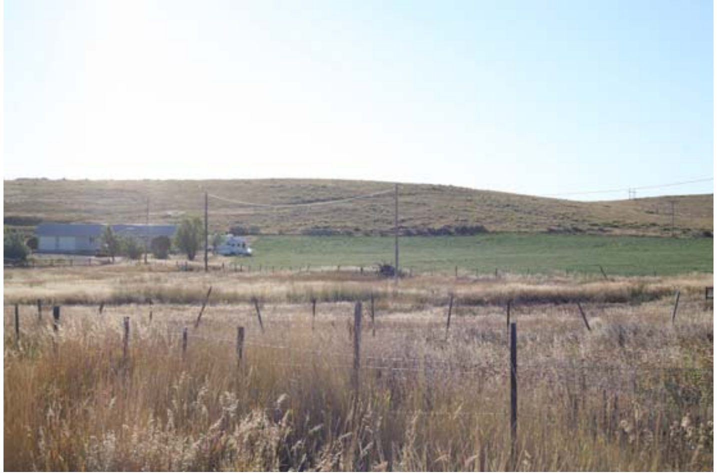
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast from Colorado State Route 394

Moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting associated with a dispersed residence along Colorado State Route 394, southeast of Craig, Colorado. The proposed Project would traverse rolling terrain and would be viewed in a skylined condition from an inferior viewing position. Earthwork associated with the construction of access roads and right-of-way clearing would be mostly screened but where visible, would produce geometric forms and curvilinear lines in the landform and vegetation. The proposed structures and conductors would be seen at approximately 0.25 mile in context with an existing 138kV transmission line and would introduce strong structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

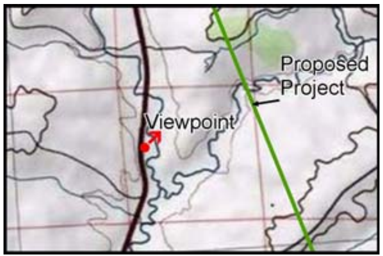
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 63 Dispersed residences north of Craig

VRM Class/VQO:
n/a

Location:
Township: 8N
Range: 90W
Section: 23

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Slightly concave to gently rolling, blocky/pyramidal	Low, amorphous and geometric patches, group/clumped areas	Rectangular, triangular
Line	Gently curving, horizontal, diagonal,	Strong diagonal butt edges	Horizontal, diagonal
Color	Browns/ tans	Greens, yellows, tans, sage, grays, reds	Grays, whites, reds, browns
Texture	Fine grain	Fine to coarse grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				■				■	■			
Elements: Line				■				■		■		
Elements: Color				■				■		■		
Elements: Texture				■				■		■		

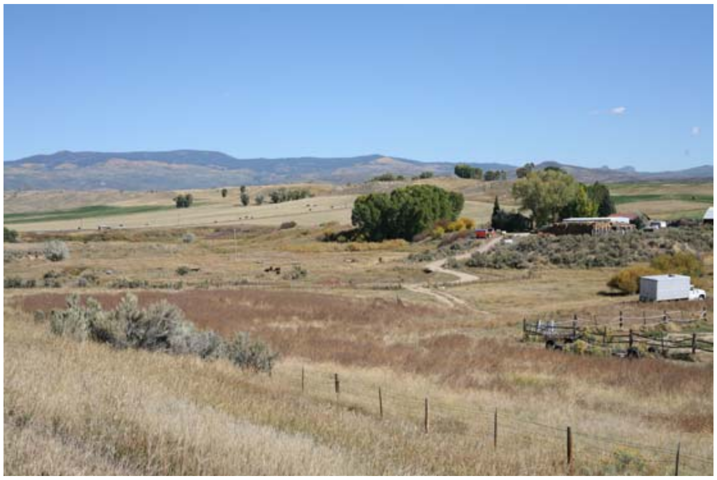
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Colorado State Route 13

Moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting associated with a dispersed residence along Colorado State Route 13, north of Craig. The proposed Project would cross rolling terrain and be visible in a partially screened and backdropped condition. Construction access and tower pad disturbance to landform and vegetation would not be visible form this KOP due to topographic screening. The proposed Project structures and conductors would be visible at approximately 1 mile and introduce moderate structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

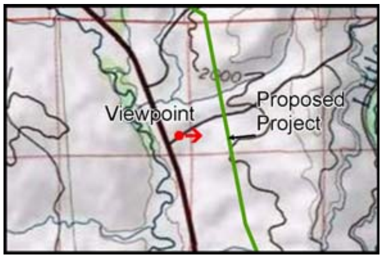
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 64 Access to Routt NF recreation

VRM Class/VQO:
n/a

Location:
Township: 8N
Range: 90W
Section: 3

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling	Amorphous patches, stippled in areas	Weak, simple vertical
Line	Curving, diagonal, undulating horizontal	Curving butt (at road) and diffuse edges	Vertical, thin, straight
Color	Tan, beige, gray	Greens, tans, yellow sage	Light browns
Texture	Fine grain	Fine to medium grain, dense	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Minimal disturbance for geometric clearings for tower pads and access	Geometric patches of reestablished low vegetation on clearings	Vertical; complex, triangular, geometric
Line	Horizontal, gently undulating	Horizontal butt edge created at clearing	Diagonal, horizontal; thin concave (conductors)
Color	Tans	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■				■			■			
Line		■				■			■			
Color			■				■		■			
Texture			■				■		■			

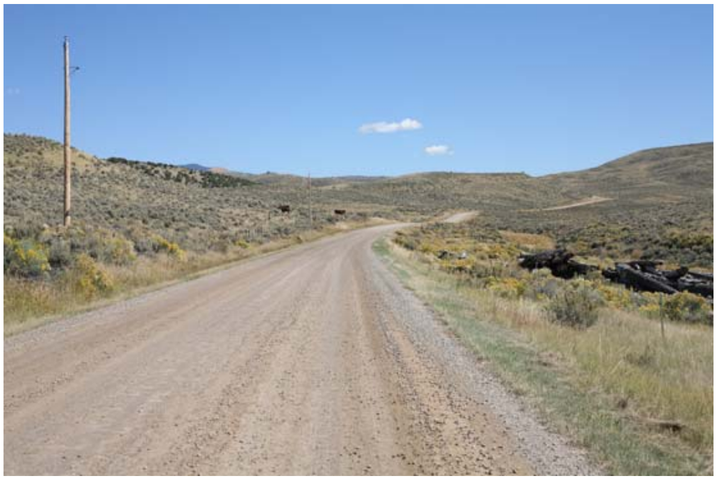
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



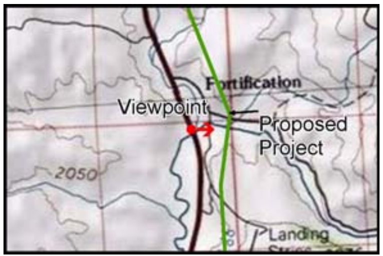
View east from Moffat County Road 27, Colorado

Strong contrast would result from the construction and operation of the proposed Project within this enclosed landscape setting. The proposed Project would cross rolling terrain in a partially backdropped condition from an access route for the Routt National Forest. Disturbance associated with construction access and tower pad earthwork would be intermittently visible and introduce moderate contrast to landform and vegetation elements of form and line with a weak contrast with color and texture as thin, broken horizontal and diagonal lines would be visible. The proposed structures and conductors would be seen at approximately 0.4 mile and introduce strong contrast in the structure elements of form, line, color and texture in a landscape with minimal disturbance and influence from existing structures. Minimizing slope cut and fill in steeper areas (selective mitigation #3) seen from this KOP would reduce contrast with existing landform and vegetation characteristics, however strong structure contrast would remain because of the skylined structures and conductors.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 10N	Location Sketch
Key Observation Point # 66 Dispersed residence along Colorado State Highway 13	Range: 91W	
VRM Class/VQO: n/a	Section: 25	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat to rolling and blocky, low meandering band	Amorphous and geometric patches, stippled and clumped areas	Thin vertical, geometric/rectangular, triangular
Line	Curving, diagonal, horizontal	Straight, diagonal butt and diffuse edges	Vertical, horizontal, diagonal, weak concave/horizontal
Color	Tan, beige, blue-gray	Greens, sage, tan, yellow reds	Browns, grays, whites
Texture	Fine to medium, reflective, smooth	Fine to coarse	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	n/a	n/a	Diagonal, horizontal; concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Repeating coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				■				■	■			
Elements: Line				■				■	■			
Elements: Color				■				■	■			
Elements: Texture				■				■	■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

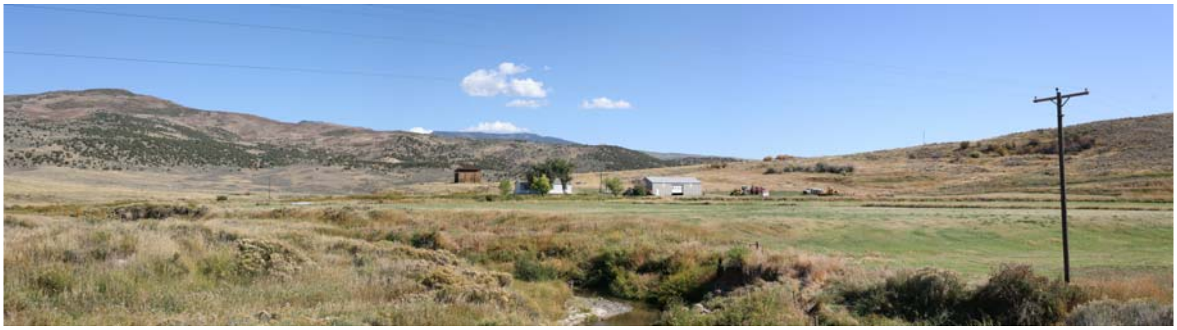
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



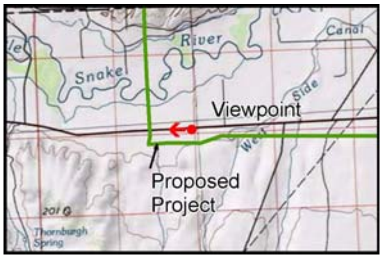
View east from Colorado State Highway 13

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting associated with a dispersed residence along Colorado State Highway 13, north of Craig. The proposed Project would cross rolling terrain and would be viewed in both backdropped and skylined conditions. Construction access and tower pad disturbances to landform and vegetation would not be seen from this KOP due to topographic screening. The proposed Project structures and conductors would be visible at approximately 0.25 mile and introduce a strong structure contrast where skylined transmission structures would be viewed from an inferior position.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 67 Dispersed residences south of Baggs	Township: 12N Range: 92W	
VRM Class/VQO: n/a	Section: 20	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling, blocky	Geometric strips, low amorphous clump/groups	Thin low repeating vertical, geometric, rectangular, triangular
Line	Gently curving, horizontal, straight, diagonal, layered	Butt edges (at road and fence line)	Vertical, diagonal, horizontal
Color	Browns, tans, grays	Greens, tans, yellow	Subtle grays, browns, reds
Texture	Fine grain, smooth	Fine to medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; concave (conductors)
Color	Browns, tans, grays	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■		■			
Line			■				■		■			
Color			■				■		■			
Texture			■				■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

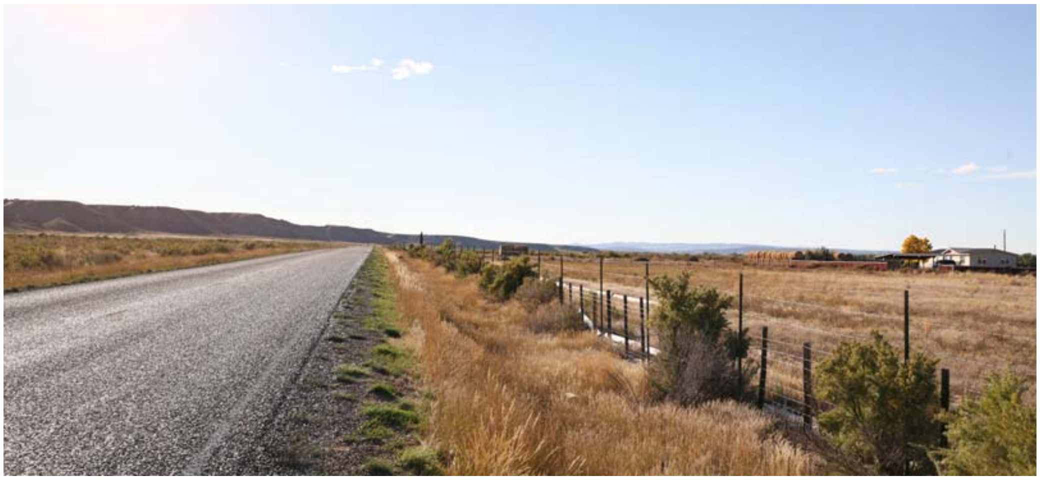
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



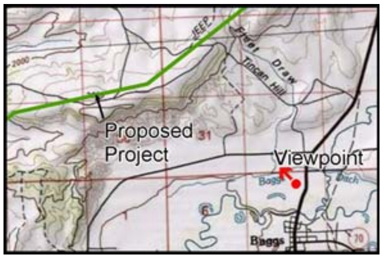
View west from Moffat County Road 4

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape associated with dispersed residences along Moffat County Road 4, southwest of Baggs, Wyoming. The proposed Project would traverse flat slopes paralleling the road and then cross perpendicular approximately 0.5 mile from this viewpoint. Earthwork associated with the construction of access roads as well as right-of-way clearing would be mostly screened but where visible, would produce geometric forms and curvilinear lines in the landform and vegetation. The proposed Project would be visible in the foreground out to approximately a 0.5 mile and introduce strong structure contrast where the structures and conductors would be skylined.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 73 Baggs residential	Township: 12N Range: 91W	
VRM Class/VQO: III	Section: 5	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat to low rugged, blocky, horizontal	Indistinct, some stippled areas	Geometric, rectangular, cylindrical, horizontal
Line	Irregular, angular, banding	Indistinct, diffuse	Horizontal, vertical, diagonal
Color	Browns, tans	Dull and dark green	Browns, grays, tans, reds, white
Texture	Medium to coarse grain	Fine to medium grain	Medium to coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Thin, vertical
Line	n/a	n/a	Thin vertical
Color	n/a	n/a	Dull gray
Texture	n/a	n/a	Uniform repeating medium grain, sparse density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨			▨	
	Line				▨				▨			▨	
	Color				▨				▨			▨	
	Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

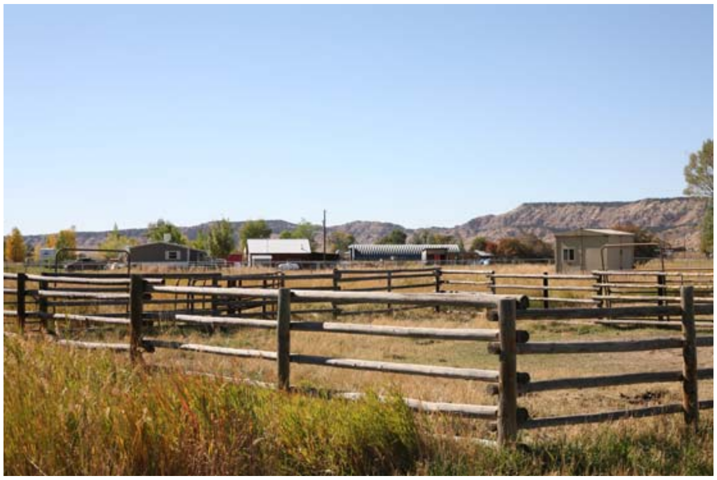
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



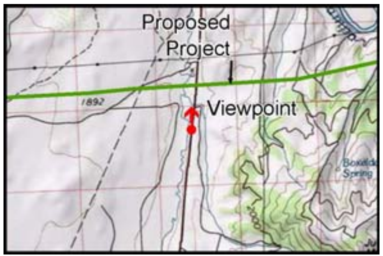
View northwest from Cowpoke Road, Baggs, Wyoming

Weak contrast would result from the construction and operation of the proposed Project in this panoramic landscape setting viewed from residences in Baggs, Wyoming of land designated as VRM Class III. The Project would be intermittently to fully screened by topography in the background with cultural modifications associated with rural development visible in the immediate foreground. In locations where the structures may be visible, only the top of the structures would be seen 2.4 miles away which would introduce weak structure contrast into the landscape.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 6N	Location Sketch
Key Observation Point # 83 Moffat County Road 57	Range: 95W	
VRM Class/VQO: n/a	Section: 16	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling	Indistinct, with areas of stippling	Vertical, geometric
Line	Gently curving, horizontal	Indistinct, weak diffuse edges and butt edge (at road)	Vertical/diagonal; thin concave (conductors)
Color	Browns, tans, grays (road)	Greens, tans, grays	Grays, transparent, brown
Texture	Fine grain, smooth	Fine to medium grain	Uniform medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features: Landform/Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■		■		
	Line				■				■		■		
	Color				■				■		■		
	Texture				■				■		■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

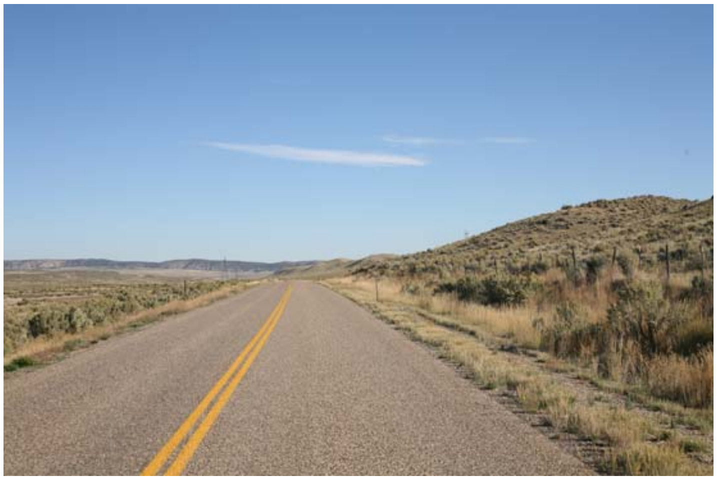
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



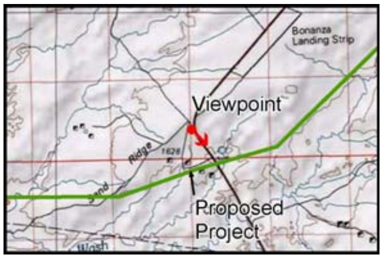
View north from Moffat County Road 57, Colorado

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting associated with views along Moffat County Road 57. The proposed Project would be viewed from a level position as it crosses flat terrain in a partially skylined condition. Modification of landform and vegetation patterns associated with construction access and tower pads would not be visible from this viewpoint. The proposed structures and conductors would be seen at approximately a 0.5 paralleling both an existing 345kV and 138kV transmission line. The proposed structures would be larger and closer to this KOP than the existing transmission lines, therefore, the proposed Project would introduce a moderate level of structure contrast. To reduce contrast on views from this road, selective mitigation measure #9 (maximize span length) would be applied to reduce dominance of structures being located adjacent to the road.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 8S	Location Sketch
Key Observation Point # 86 Utah State Route 45 (north of Bonanza)	Range: 24E	
VRM Class/VQO: III	Section: 34	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/slightly concave to gently rolling, small butte features	Low indistinct patches, stippled areas	Vertical, thin; geometric, triangular, cylindrical
Line	Continuous, horizontal, undulating, diagonal	Indistinct, weak diffuse edges	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays, light brown	Sage greens, tans	Grays, transparent, browns
Texture	Fine to medium grain	Fine to medium grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays, light brown	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

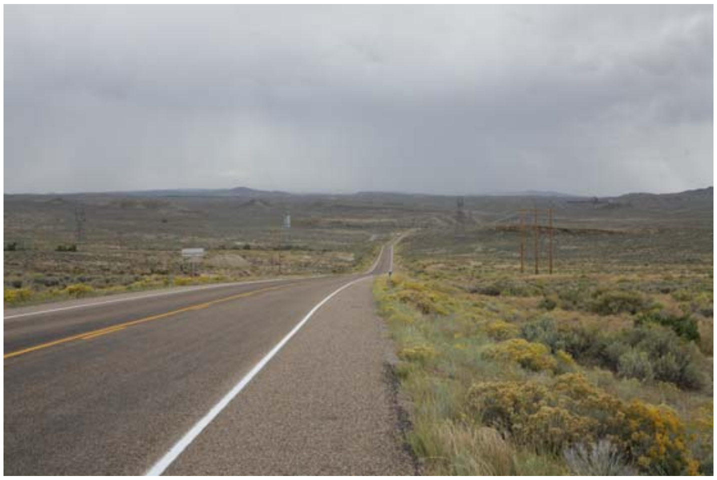
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast from Utah State Route 45 north of Bonanza

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated by the BLM as VRM Class III and viewed from Utah State Route 45. The proposed Project crosses rolling terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access would introduce additional curvilinear lines and geometric forms into the landscape. Vegetation clearing would be limited to areas around tower pads and access roads, and these geometric forms would over time blend with existing vegetation patterns. The proposed structures would be seen at 0.6 mile in context with existing 345kV and 138kV transmission lines.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/25/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

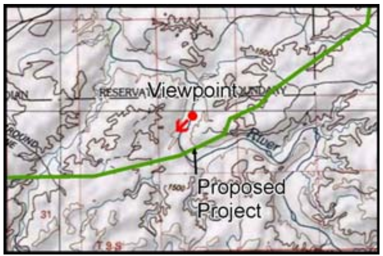
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
87 Enron Recreation Area (on White River)

VRM Class/VQO:
III

Location:
Township: 9S
Range: 22E
Section: 28

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, rolling to steep	Band along riparian corridor, stippled canyon walls	n/a
Line	Continuous, curving, flowing, horizontal, parallel	Butt edge between riparian vegetation and canyon wall	n/a
Color	Reflective, gray-green, browns, reds	Variety of greens, tans	n/a
Texture	Fine, glossy, rippled, medium to coarse grain canyon walls	Medium to coarse grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Geometric, curvilinear	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Browns	Sage greens, tans	Dull gray, transparent
Texture	Fine	Fine grain	Coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■		■			
Elements: Line		■					■		■			
Elements: Color			■				■		■			
Elements: Texture		■					■		■			

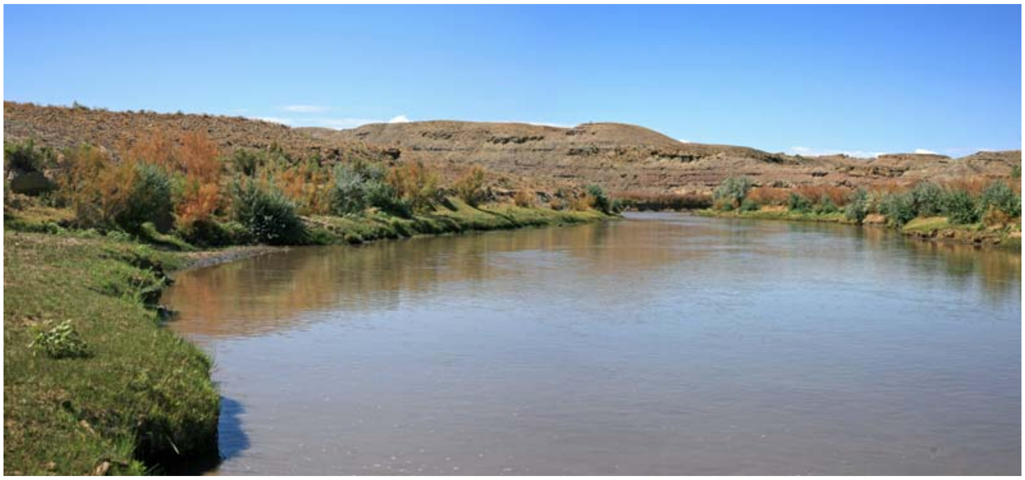
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/25/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from Enron Recreation Area (White River), Utah

Strong contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting associated with the Enron Recreation Area along the White River. The proposed Project would cross the White River through an area of rolling terrain and would be visible in a skylined condition from an inferior viewing position. Disturbance associated with the construction of access roads and tower pads would be visible and would produce a weak/moderate contrast with existing landform characteristics. Due to the low-growing vegetation crossed by the proposed Project, which would require limited vegetation clearing, contrast resulting from the modification of the vegetation's form, line, color, and texture would be weak. The proposed structures and conductors would be seen at approximately 0.5 mile and introduce strong structure contrast. Selective mitigation measures #2 (limit construction of new access roads), #3 (minimize ground disturbance), and #9 (maximize span length) would be applied to reduce contrast as viewed from this recreation area.

VISUAL CONTRAST RATING WORKSHEET

Date:	8/24/2009
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

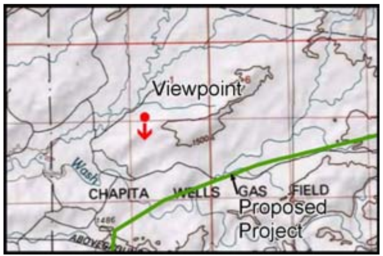
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 88 Fantasy Canyon

VRM Class/VQO:
IV

Location:
Township: 9S
Range: 22E
Section: 1

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, complex	Low, amorphous patches and stippled areas	Low, geometric
Line	Horizontal, diagonal, angular	Weak indistinct and diffuse edges	Diagonal, vertical
Color	Red-browns, tans, grays	Subtle, greens/yellows	Browns
Texture	Medium to coarse grain, striated	Fine grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	n/a
Line	n/a	n/a	n/a
Color	n/a	n/a	n/a
Texture	n/a	n/a	n/a

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨				▨
	Line				▨				▨				▨
	Color				▨				▨				▨
	Texture				▨				▨				▨

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	8/24/2009
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

View south from Fantasy Canyon parking area, Utah

Views of the proposed Project, located south of Fantasy Canyon, would be completely screened by topography. If the proposed Project were visible, it would be seen crossing land designated as VRM Class IV in an area developed for oil and gas extraction.

VISUAL CONTRAST RATING WORKSHEET

Date: 10/10/2011
BLM Field Office/National Forest: Vernal Field Office
Resource Area:
Activity (program): 500kV Transmission Project

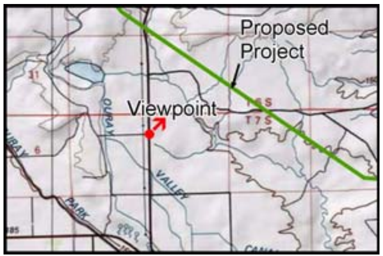
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
100 Dispersed residences along Utah State Route 88

VRM Class/VQO:
III

Location:
Township: 7S
Range: 20E
Section: 5

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/slightly concave to gently rolling	FG: Rounded, pyramidal MG: Low indistinct patches,	Vertical, rhythmic; geometric/triangular
Line	Continuous, horizontal, undulating, simple	FG: Vertical, geometric MG: Indistinct, weak diffuse edges	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans, browns, reds, subtle	FG: Vibrant greens MG: Tans	Dull gray, transparent
Texture	Fine grain	FG: Fine to coarse grain MG: Fine to medium grain	Repeating medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans, browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

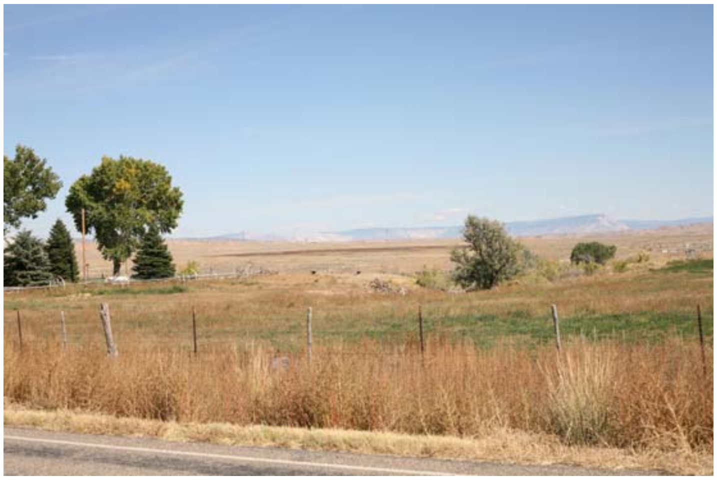
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/10/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Utah State Route 88 adjacent to residence, Utah

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III and associated with a residence along Utah State Route 88. The proposed Project would cross relatively flat terrain with intermittent vegetation screening. Disturbance associated with construction access and tower pads would weakly contrast with the landform and vegetation elements of contrast since the thin horizontal lines from these disturbances are similar to lines present in the existing landscape character. The proposed Project structures and conductors would be visible at approximately one mile paralleling a transmission line with similar design characteristics.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

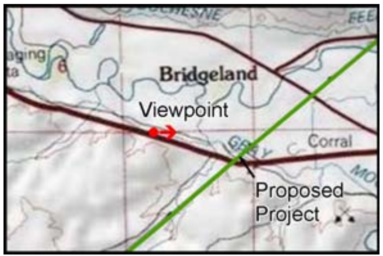
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
103 Dinosaur Diamond SB (U.S. HWY 40 S of Bridgeland)

VRM Class/VQO:
n/a

Location:
Township: 4S
Range: 3W
Section: 8

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/rolling, rounded	Low, amorphous patches and stippled areas	Vertical, geometric
Line	Horizontal, undulating, continuous	Weak indistinct and diffuse edges	Vertical/diagonal; thin concave (conductors)
Color	Beige, tans	Subtle, greens, tans, bright greens along riparian corridor	Brown, gray
Texture	Medium grain	Fine to medium grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Beige, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■					■			■		
	Line		■					■				■	
	Color			■				■			■		
	Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

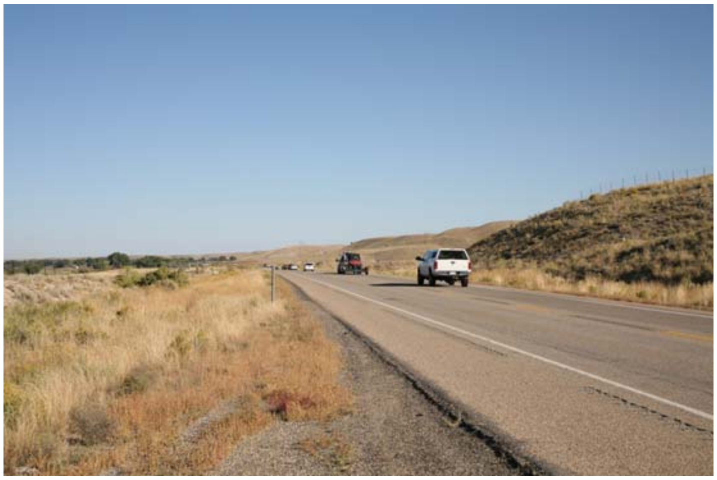
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View east from U.S. Highway 40 east of Duchesne, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from U.S. Highway 40. The proposed Project crosses rolling terrain in a partially backdropped condition. Weak vegetation contrast would occur as thin diagonal lines and geometric patches of cleared vegetation may be visible. The construction of access roads and tower pads would produce geometric forms and curvilinear lines which would minimally contrast with the rolling terrain viewed from this point. The proposed structures would be seen 0.7 mile away on the other side of an existing 138kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/21/2009
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

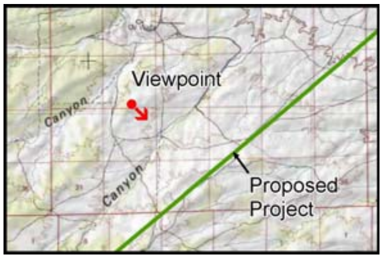
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
105 Dispersed residences south of Duchesne

VRM Class/VQO:
n/a

Location:
Township: 4S
Range: 4W
Section: 20

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, rounded	Amorphous patches	Vertical, thin
Line	Continuous, horizontal	Diffuse to butt edges from juniper stands	Thin vertical
Color	Tans	Light tan (grasses), dark green (juniper)	Brown
Texture	Fine to medium	Fine to patchy, coarse	Fine grain, sparse density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat, horizontal	Linear vegetation clearing in right-of-way	Thin, vertical
Line	Curvilinear, horizontal	Butt edge along edge of right-of-way	Thin, vertical; thin/weak concave (conductors)
Color	Tans	Light tan (grasses)	Dull gray
Texture	Fine grain	Fine grain	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■			■				■		
	Line			■				■			■		
	Color			■				■				■	
	Texture			■				■				■	

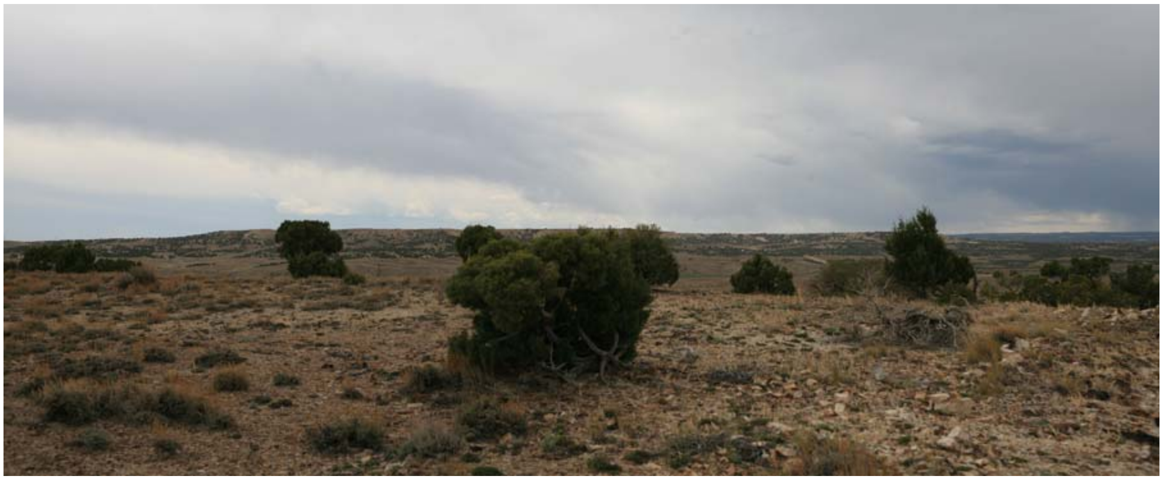
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/21/2009
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



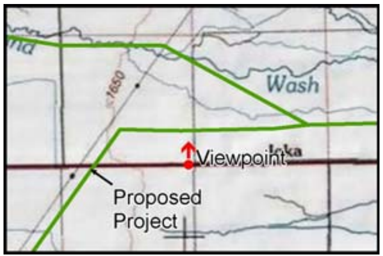
View southeast from residences south of Duchesne, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project, within a panoramic landscape as viewed from residences south of Duchesne. The proposed Project crosses rolling terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access in addition to right-of-way vegetation clearing would introduce weak contrast due to the proposed Project being located approximately 2 miles away. The proposed structures would be seen adjacent to an existing 138kV transmission line and due to the distance from these viewers, would introduce a weak/moderate structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 3S	Location Sketch
Key Observation Point # 107 Ioka residential	Range: 2W	
VRM Class/VQO: n/a	Section: 5	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, horizontal, slightly rolling, plateaus	Low and flat to tall, vertical	Tall, vertical, geometric, transparent
Line	Weak, horizontal	Regular, vertical, horizontal, butt edges	Complex, angular, concave, horizontal
Color	Browns, reds	Vivid greens, tans	Reflective, gray
Texture	Fine grain, smooth	Fine grained grasslands; dense, medium grained trees	Medium grain, sparse density, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, flat	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Weak, horizontal	Diagonal, horizontal; thin concave (conductors)
Color	Browns	Tans, gray-greens	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■			■			■			
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

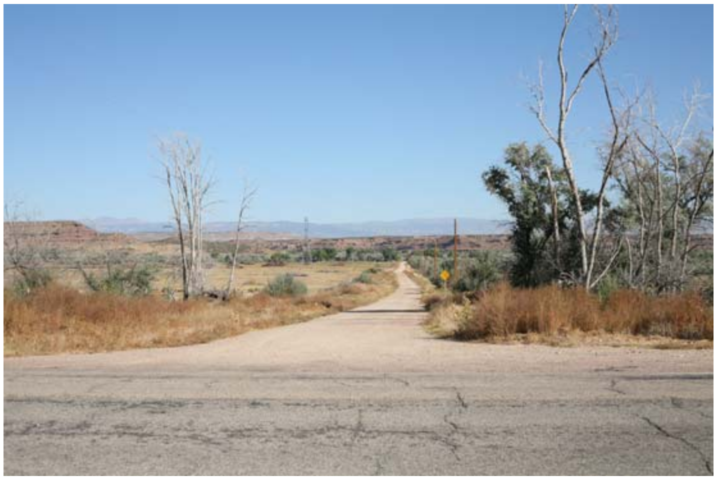
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from 7000 West adjacent to residences in Ioka, Utah

Moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting viewed from residences in Ioka, Utah. The proposed Project would cross relatively flat to slightly rolling terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access roads and vegetation clearing in the right-of-way would be mostly screened by vegetation, but where visible would introduce additional geometric forms and curvilinear lines into the landscape. The proposed structures would be seen at 0.3 mile and in context with an existing 345kV transmission line. The proposed structures would introduce a moderate/strong structure contrast due to their proximity to this viewpoint.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

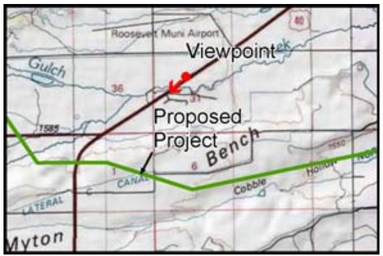
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 108 Dinosaur Diamond SB (U.S. HWY 40 SW of Roosevelt)

VRM Class/VQO:
n/a

Location:
Township: 2S
Range: 1W
Section: 31

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/rolling, rounded	Low, amorphous patches and stippled areas	Vertical, geometric, rectangular
Line	Horizontal, undulating, continuous	Weak indistinct and diffuse edges	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Beige, tans	Subtle, greens, tans, bright greens along riparian corridor and in	Brown, gray, blue, white
Texture	Medium grain	Fine to medium grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Beige, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨				▨	
	Line			▨				▨				▨	
	Color			▨				▨				▨	
	Texture			▨				▨				▨	

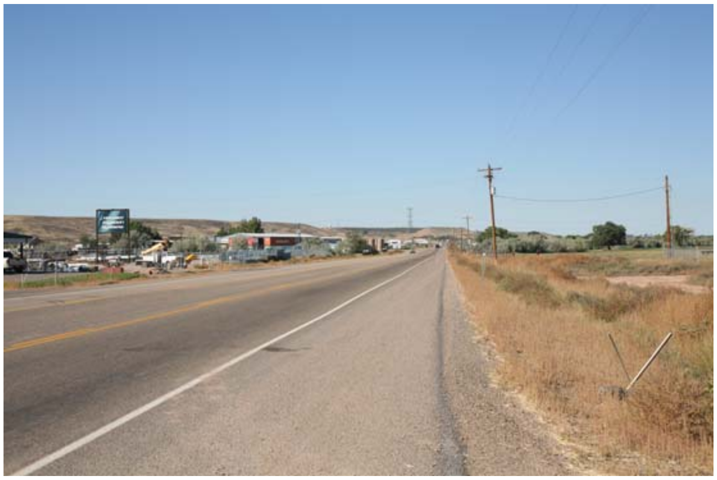
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



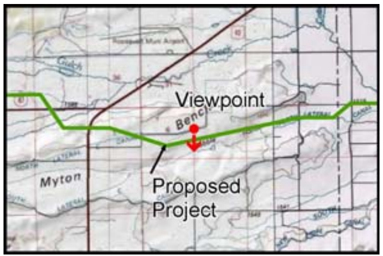
View southwest from U.S. Highway 40 southwest of Roosevelt, Utah

Weak contrast would result from the construction and operation of the proposed Project, within a panoramic landscape setting viewed from U.S. Highway 40. The proposed Project crosses rolling terrain and would be skylined as it crosses the plateau in the distance. Earthwork associated with construction access and tower pads would be visible and introduce thin diagonal lines and geometric pads on the plateau. Vegetation clearing in the right-of-way would be limited due to the low-growing vegetation and if seen, would introduce weak geometric vegetative forms. The proposed structures would be seen approximately 2 miles away adjacent to an existing 345kV transmission past an area of industrial development.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/25/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 3S	Location Sketch
Key Observation Point # 109 Dispersed residences south of Roosevelt	Range: 1E	
VRM Class/VQO: n/a	Section: 6	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, horizontal, terraces	Low, flat	Low, geometric
Line	Undulating, horizontal, angular	Regular, linear, butt edges	Vertical, angular, horizontal
Color	Red, brown	Vivid greens, tans	Reflective, gray, white
Texture	Stippled, patchy, matte	Dense, granular	Fine grain, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat, horizontal	Low, flat	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, horizontal	Regular, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Red, brown	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

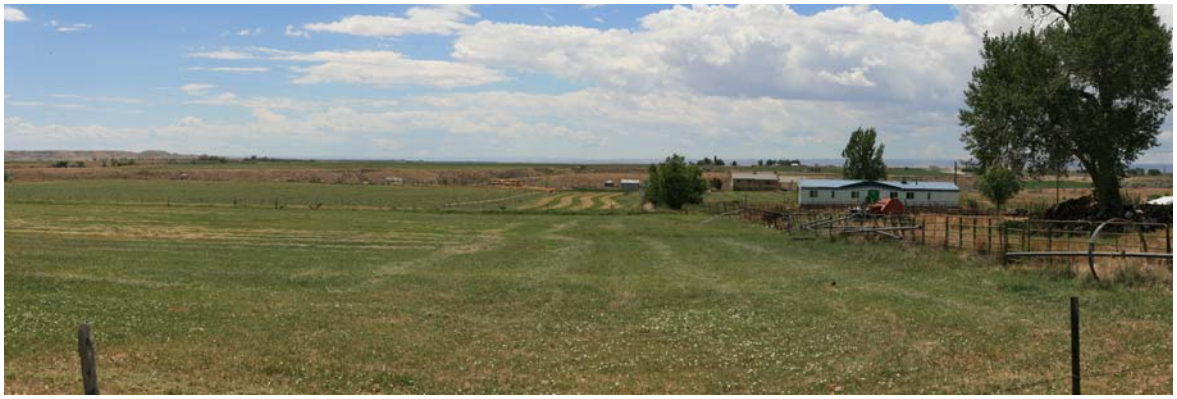
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/25/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



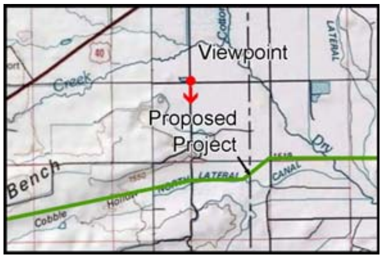
View south from residences south of Roosevelt, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting from residences south of Roosevelt. The proposed Project would be mostly skylined as it traverses the land beyond the agricultural fields at the edge of the escarpment. Earthwork associated with the construction of access roads and right-of-way clearing would be mostly screened but where visible, would produce geometric forms and curvilinear lines in the landform and vegetation. The proposed structures would be seen at approximately 0.25 mile and due to separation between the proposed Project and the existing 345kV transmission line, the existing transmission line would seen behind this viewpoint approximately 0.5 mile away. Due to the proximity of these residences to the proposed Project, structure contrast was assessed to be at a high level.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 110 Roosevelt residential	Township: 2S Range: 1W	
VRM Class/VQO: n/a	Section: 27	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, horizontal, plateaus	Low, flat	Vertical, geometric,
Line	Horizontal, angular	Regular, straight, horizontal	Complex, angular; thin/weak concave (conductors)
Color	Browns	Vivid greens, tans	Gray, transparent
Texture	Fine to medium grain	Dense, granular	Uniform medium grain, medium to sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin, triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal; thin/weak concave (conductors)
Color	Browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

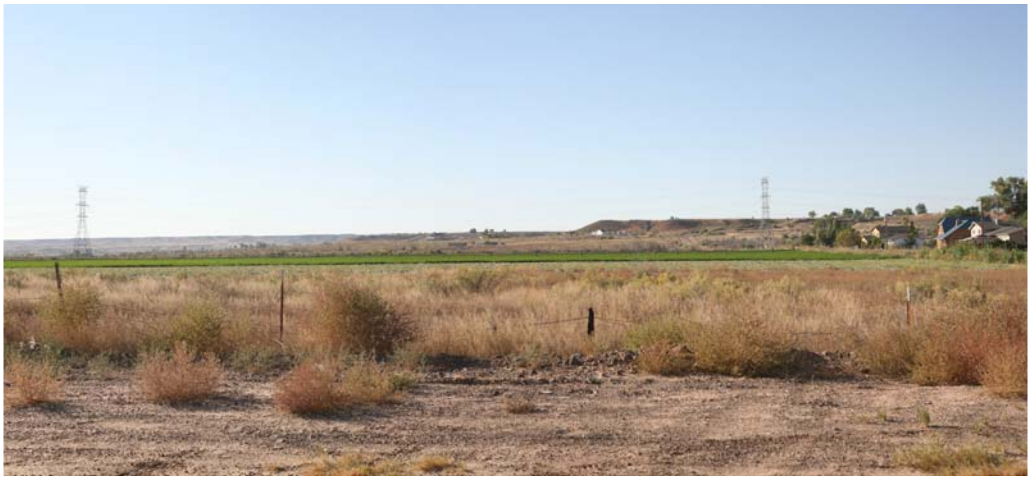
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



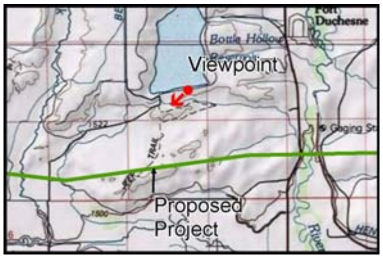
View south adjacent to residences south of Roosevelt, Utah

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from residences south of Roosevelt, Utah. The proposed Project crosses flat to gently rolling terrain and would be mostly backdropped by adjacent terrain. Disturbance associated with construction access and right-of-way vegetation clearing would be mostly screened by topography from this viewpoint but where visible, would introduce geometric forms which would weakly contrast with the existing landscape character. The proposed structures would be seen 1.4 miles away beyond an existing transmission line and would be partially screened by topography. Due to the dominance of the existing transmission line, the proposed Project would introduce a weak structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 2S	Location Sketch
Key Observation Point # 111 Bottle Hollow Reservoir	Range: 1E	
VRM Class/VQO: n/a	Section: 28	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/slightly rolling with terraces	Low indistinct patches, stippled areas	Vertical, thin; geometric, triangular
Line	Continuous, horizontal to angular, undulating	Indistinct, weak diffuse edges	Vertical/diagonal; thin concave (conductors)
Color	Tans, reds, light brown	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans, reds, light brown	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨				▨	
	Line			▨				▨				▨	
	Color			▨				▨				▨	
	Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

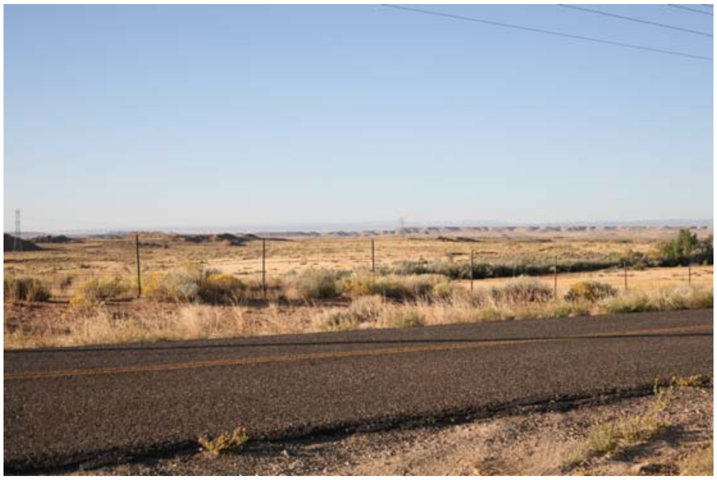
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



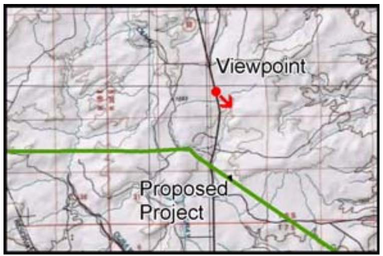
View southwest from recreation area at the south side of Bottle Hollow Reservoir, UT

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting viewed from the Bottle Hollow recreation area. The proposed Project crosses rolling terrain and is located further from the viewer than the existing 345kV transmission line. Disturbance associated with construction access as well as vegetation clearing in the right-of-way would be mostly screened from view but where visible, would introduce curvilinear lines and geometric forms. The proposed structures would be seen approximately 1 mile away in a partially backdropped condition beyond an existing 345kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/10/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 6S	Location Sketch
Key Observation Point # 113 Utah State Route 88 (north of Leota)	Range: 20E	
VRM Class/VQO: III	Section: 21	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently rolling, jagged edges on edges of terraces	Low indistinct patches, stippled areas	Vertical, thin; geometric, triangular
Line	Continuous, horizontal, undulating, angular	Indistinct, weak diffuse edges	Complex, vertical/diagonal; thin concave (conductors)
Color	Tans, reds	Sage greens, tans	Reflective, gray
Texture	Medium grain	Fine to medium grain	Uniform coarse grain, medium density, repeating

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans, reds	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density, repeating

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨				▨	
	Line			▨				▨				▨	
	Color			▨				▨				▨	
	Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

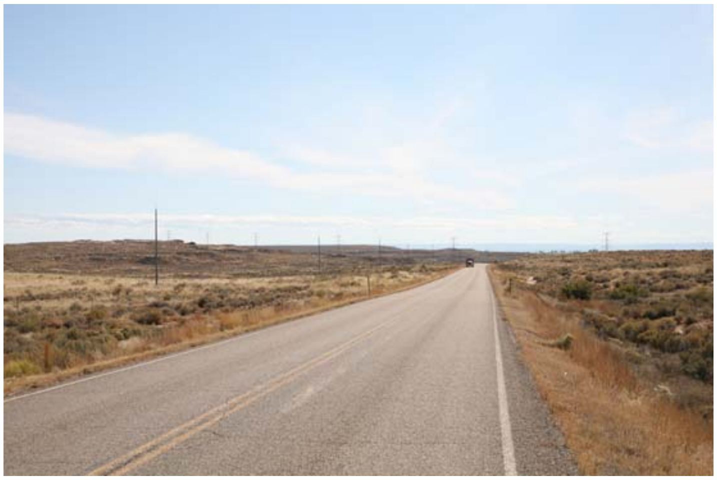
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/10/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



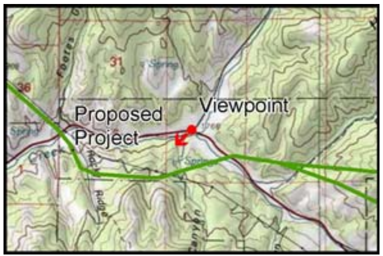
View southeast from Utah State Route 88 north of Pelican Lake

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III viewed from Utah State Route 88. The proposed Project crosses rolling terrain and due to the slightly superior viewing position, the proposed project would be backdropped. Disturbance associated with construction access and vegetation clearing within the right-of-way would be mostly screened by topography but where visible, would introduce weak contrast. The proposed structures would be seen partially screened 1.4 miles away, beyond an existing 345kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 13S	Location Sketch
Key Observation Point # 131 Mount Nebo Loop Scenic Byway	Range: 2E	
VRM Class/VQO: n/a	Section: 5	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Prominent, steep, undulating	Geometric and amorphous patches, stippled areas	Vertical, geometric
Line	Complex, diagonal, curving	Irregular butt and diffuse edges	Vertical/diagonal; thin concave (conductors)
Color	Tans	Variety of greens, tans, seasonal color	Reflective, gray, brown, transparent
Texture	Medium grain	Fine to medium grain	Medium grain, medium density, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-greens	Dull gray, transparent
Texture	Fine texture	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	▨					▨				▨		
	Line		▨				▨				▨		
	Color		▨					▨			▨		
	Texture		▨					▨			▨		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

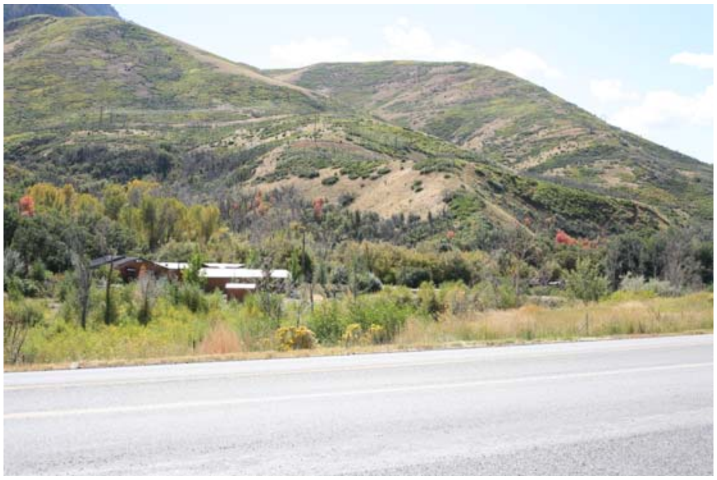
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



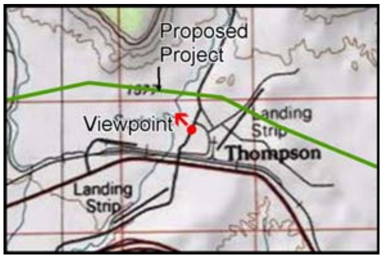
View southwest from intersection of Mount Nebo Scenic Byway and Utah State Route 132

Moderate contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting viewed from the Mount Nebo Scenic Byway. The proposed Project would cross steep terrain and would be mostly backdropped by adjacent terrain. Disturbance associated with the construction of access roads and vegetation clearing within the right-of-way would introduce additional geometric forms into the landscape. The proposed structures would be seen at approximately 0.5 mile in context with existing 345kV and 138kV transmission lines from an inferior viewing position. Therefore, the structures would introduce moderate structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 21S	Location Sketch
Key Observation Point # 145 Thompson Springs residential	Range: 20E	
VRM Class/VQO: n/a	Section: 21	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, Book Cliffs are prominent in view	Short, patchy	Low, geometric
Line	Horizontal	Angular, broken, diffuse edges	Horizontal, diagonal
Color	Tans, grays	Gray-greens, tans	White, browns
Texture	Fine grain	Even, medium grain	Medium grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Tans, grays	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

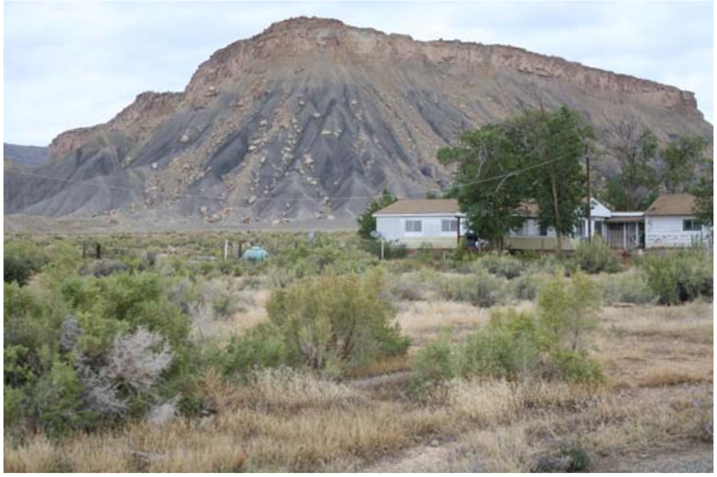
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from residences in Thompson Springs, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from residences in Thompson Springs, Utah. The proposed Project crosses level to gently rolling terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access as well as right-of-way vegetation clearing would be mostly screened by vegetation and where visible, would introduce weak horizontal lines and geometric forms in both the landform and vegetation components of this landscape. The proposed structures would be seen 0.3 mile away and due to this proximity, would introduce a strong structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

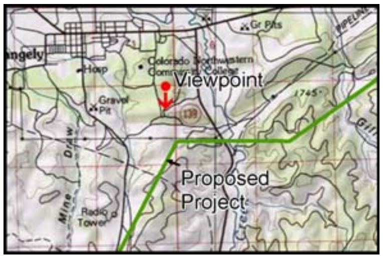
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 147 Rangely residential

VRM Class/VQO:
III

Location:
Township: 1N
Range: 102W
Section: 12

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, rounded, blocky	Amorphous patches, stippled	Geometric, rectangular, triangular, thin vertical
Line	Undulating horizontal, diagonal	Diffuse and butt edges	Angular, vertical, horizontal
Color	Brown-tans	Tan, dark greens, sage	Dark browns, tans, whites
Texture	Fine grain	Fine to medium grain	Coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Thin clearing for access road	Low thin strip of reestablished vegetation	Vertical, thin; geometric, triangular
Line	Horizontal, diagonal	Horizontal and diagonal butt edge created at clearing	Vertical/diagonal; thin concave (conductors)
Color	Brown-tan	Tans, greens	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

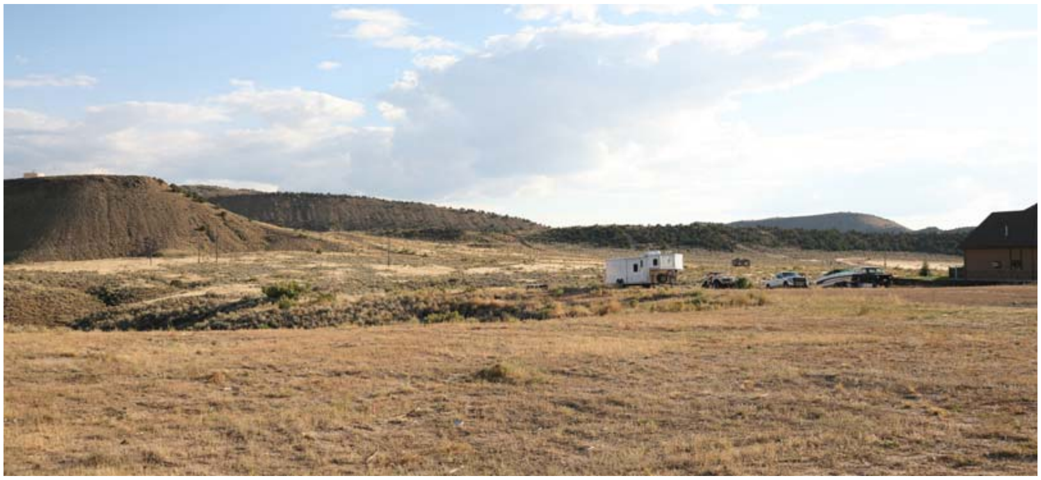
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from La Mesa Circle, Rangely, Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting associated with residences in southeast Rangely, Colorado. The proposed Project would be seen from an inferior viewing position and would be mostly screened by topography. Disturbance associated with construction access roads and tower pads would also be mostly screened by topography but where visible, would weakly contrast with existing landform and vegetation characteristics. The proposed structures and conductors would be seen 0.7 mile away and would be almost entirely screened from view but where visible, would be skylined in a moderately modified landscape setting.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

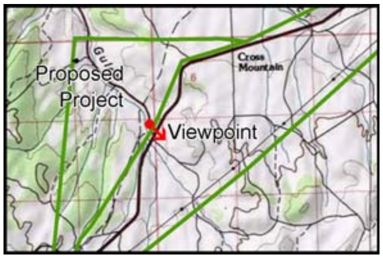
Project Name:
Energy Gateway South
Transmission Project

Key Observation Point
150 Dinosaur National Monument (SE Entrance)

VRM Class/VQO:
n/a

Location:
Township: 5N
Range: 98W
Section: 1

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Pyramidal, low rolling	Amorphous patches and strips	Vertical, rhythmic and diminishing; geometric/triangular
Line	Undulating horizontal, curving band	Diffuse to butt edges	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Brown-tans, grays/black (road)	Light tans, yellow, dark green, and light greens	Dull gray, transparent
Texture	Fine to medium	Fine to medium	Repeating/diminishing medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; concave (conductors)
Color	Brown-tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■			■			■			
Elements: Line			■			■			■			
Elements: Color			■				■		■			
Elements: Texture			■			■			■			

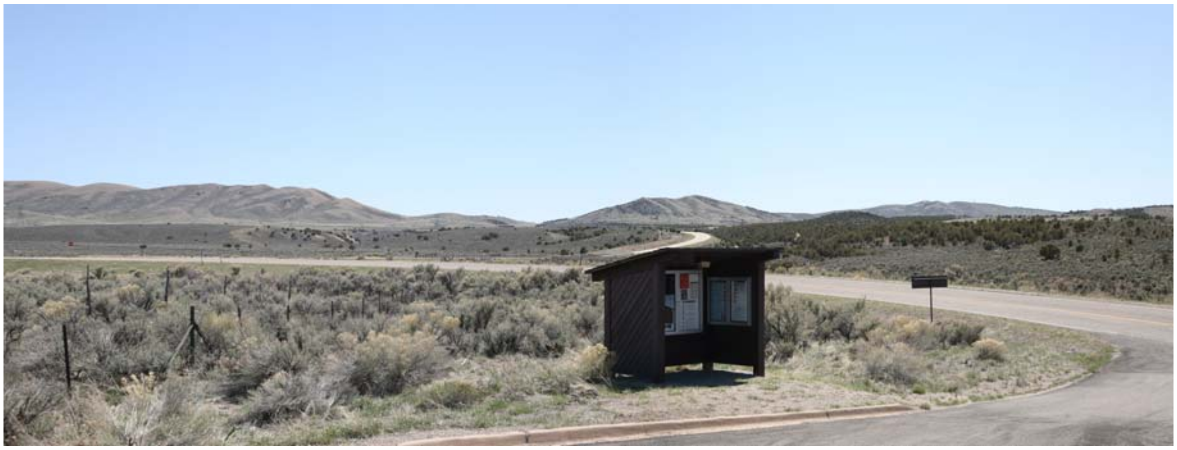
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from the kiosk on Deerlodge Road (Dinosaur National Monument), Colorado

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from the kiosk on Deerlodge Road adjacent to the turnoff into Dinosaur National Monument from U.S. Highway 40. The proposed Project would cross through level to rolling terrain in a mostly skylined condition. Earthwork associated with construction access and tower pads would produce weak landform and moderate vegetation contrast through the introduction of additional geometric forms into the landscape. The transmission structures would be seen from less than 0.25 mile away, directly adjacent to U.S. Highway 40, with two existing transmission lines located another 1 mile away. Due to the proximity of the Project to this viewpoint, structure contrast was assessed to be strong. There are limited selective mitigation measures which could be applied to reduce contrast, other than moving the Project further away,due to proximity of the Project structures which will dominate views from the kiosk.

It is important to note that another route variation is located over 1 mile away and on the other side of the two existing transmission lines where the Project would be backdropped by terrain producing a weaker level of contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

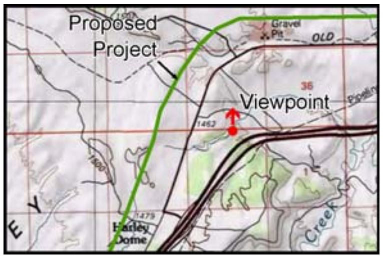
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
152 I-70 Harley Dome Rest Area (Dinosaur Diamond SB)

VRM Class/VQO:
III

Location:
Township: 19S
Range: 25E
Section: 2

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow to moderate slopes, rounded	Indistinct, stippled	n/a
Line	Horizontal, diagonal, undulating	Indistinct, irregular	n/a
Color	Tans, reds, grays	Dark greens	n/a
Texture	Fine to medium grain	Medium grain, uneven/random	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

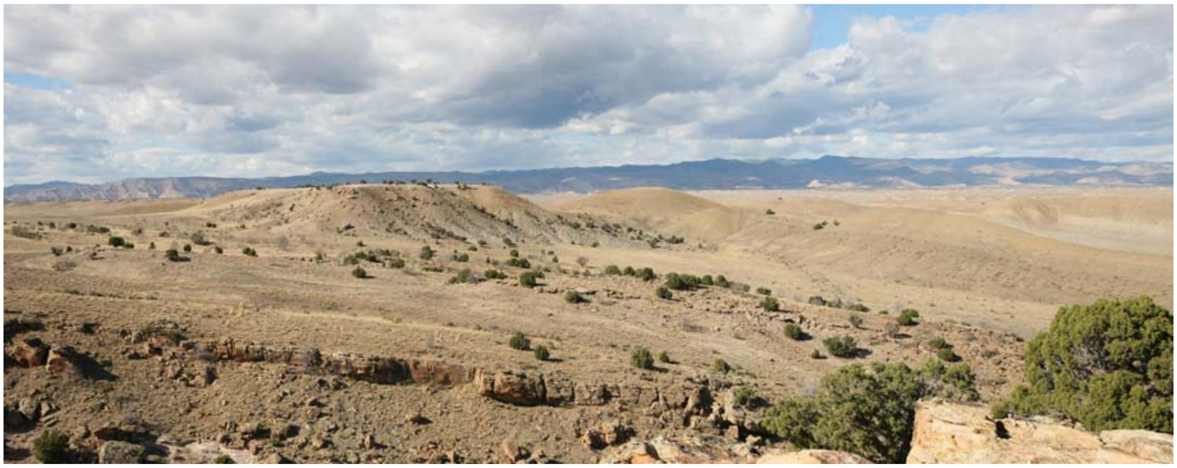
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



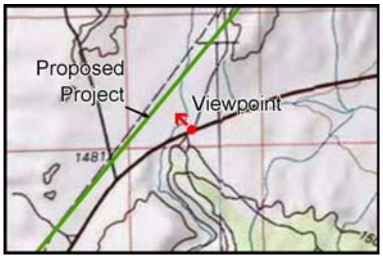
View north from overlook at Harley Dome Rest Area, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation and associated with the Harley Dome Rest Area that provides views of the Book Cliffs. The proposed Project would cross through rolling terrain in backdropped and intermittently screened conditions and would be viewed from a superior position. Disturbance associated with construction access and tower pads would have weak contrast with landform and vegetation elements of form, line, color, and texture due to the rolling terrain and low-growing vegetation. The proposed structures and conductors would be visible at 0.6 mile and would have moderate/strong contrast with existing structural elements in a natural landscape setting.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 9S	Location Sketch
Key Observation Point # 153 Mack residential	Range: 104W	
VRM Class/VQO: IV	Section: 28	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow slopes, rugged in areas	Indistinct, patches, stippled	n/a
Line	Horizontal, broken diagonal	Indistinct	n/a
Color	Tans	Gray-greens	n/a
Texture	Fine to medium grain	Medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Minimal disturbance for geometric tower pads and access through flat	Thin horizontal band of low growing reestablished vegetation at tower	Vertical; complex, triangular, geometric
Line	Horizontal	Horizontal	Diagonal, horizontal; thin concave (conductors)
Color	Tans	Tans, greens	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

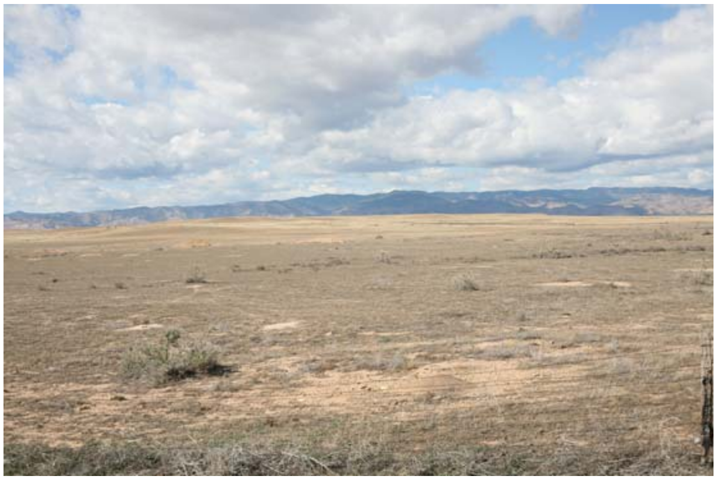
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

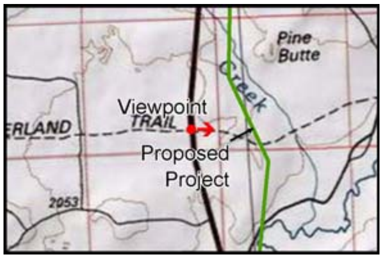


View northwest from dispersed residences west of Mack, Colorado

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape with VRM Class IV designation and associated with a residences near Mack, Colorado. The proposed Project would be viewed in a skylined condition from a level position as it traverses through relatively flat terrain. Disturbance associated with construction access and tower pads as well as any right-of-way vegetation clearing would weakly contrast with existing landform and vegetation characteristics. The proposed structures and conductors would be seen 0.3 mile away and would strongly contrast with existing structural elements as they would be seen above the horizon in a setting with limited visible cultural modifications.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point **#** 177 Overland Trail historical monument (WY HWY 789)	Township: 17N Range: 92W	 Pine Butte Creek Viewpoint TRAIL ERLAND Proposed Project 2053
VRM Class/VQO: IV	Section: 9	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low, rolling	Low, amorphous patches	Thin, vertical
Line	Undulating, horizontal	Irregular, diffuse, indistinguishable to strong butt edge (at road)	Vertical, horizontal, weak horizontal
Color	Browns, tans, grays (road)	Greens, tans, grays	Light browns, subtle grays
Texture	Fine grain	Fine to medium grain	Fine grain, sparse

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨	▨			
	Line				▨				▨	▨			
	Color				▨				▨		▨		
	Texture				▨				▨		▨		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

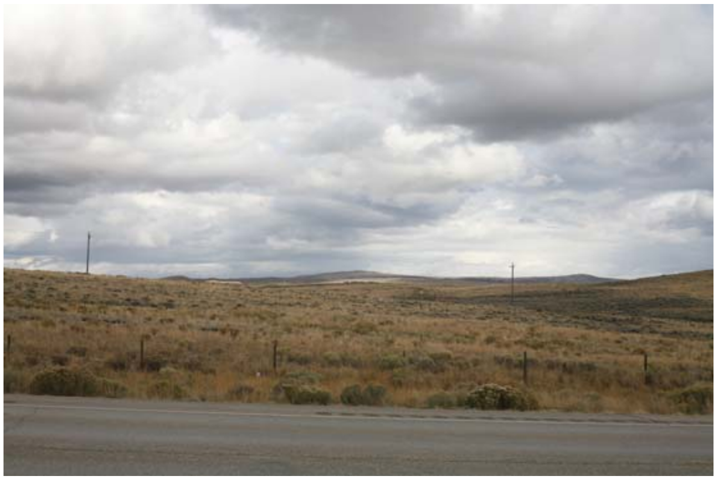
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



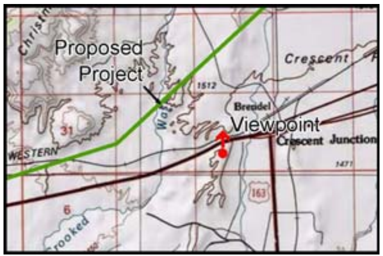
View east from Overland Trail Historic Marker on Wyoming 789

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting designated as VRM Class IV associated with views from the Overland Historic Trail as it crosses Wyoming 789. The proposed Project would be seen from a level position with intermittent to partially screened views of partially skylined structures and conductors through rolling terrain. Disturbance associated with construction access and tower pads would weakly contrast with existing landform and vegetation patterns. The proposed structures and conductors would be visible at approximately a 0.5 mile and would produce a moderate/strong structure contrast as portions of the project structures and conductors would be visible above the horizon. To reduce contrast, selective mitigation measure #9 (maximize span length) would be applied to limit dominance of transmission structures being located adjacent to the trail/historic marker.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 193 I-70 Crescent Junction Rest Stop (Dinosaur Diamond SB)	Township: 21S Range: 19E	
VRM Class/VQO: III	Section: 33	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, vertical, horizontal, rolling, rugged, plateaus	Few, stippled	Geometric, vertical
Line	Parallel, horizontal, curving, diagonal, angular	Weak diffuse, indistinct	Straight, horizontal
Color	Tans, grays, reds	Tans, greens	Light tan, brown, gray
Texture	Banded, medium to course grain	Fine grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■			■		
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

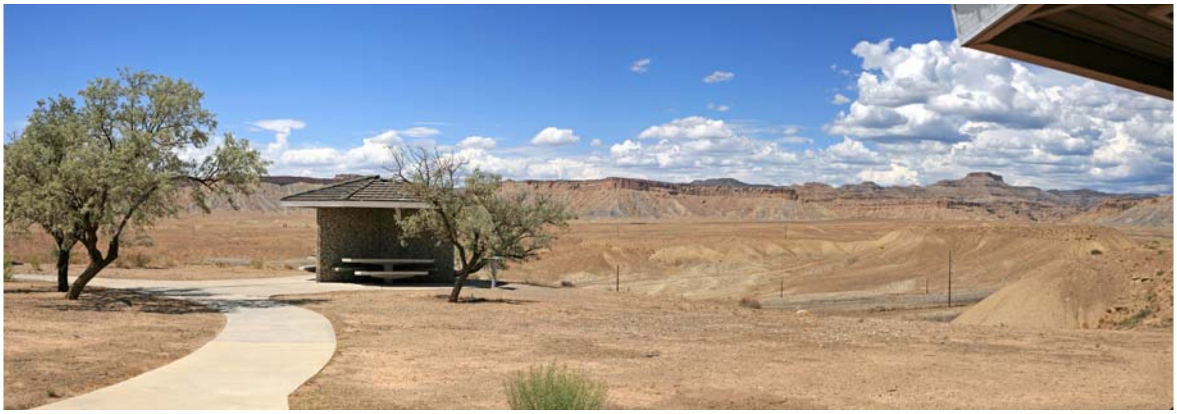
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



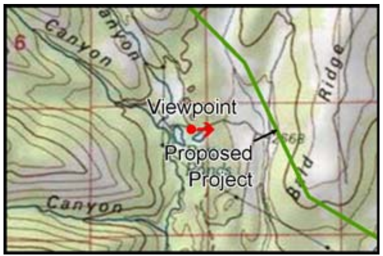
View north from picnic area at Crescent Junction Rest Area, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation and associated with the Crescent Junction Rest Area that provides views of the Book Cliffs. The proposed Project would cross through rolling terrain in a backdropped condition and would be viewed from a superior position. Disturbance associated with construction access and tower pads would produce a weak contrast due to the flat terrain and low-growing existing vegetation communities. The proposed structures and conductors would be visible at approximately 1 mile and would have moderate contrast due to the number of existing structures located closer to the viewpoint than the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 194 Potters Ponds	Township: 16S Range: 6E	
VRM Class/VQO: Partial Retention	Section: 8	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded, level ridgeline	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous, horizontal	Flowing, complex, irregular	n/a
Color	Tans	Vivid, greens, tans, seasonal variation	n/a
Texture	Medium to coarse grain	Coarse, stippled, scattered	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin; geometric, triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■			■				■			
Line		■			■				■			
Color			■				■		■			
Texture		■					■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

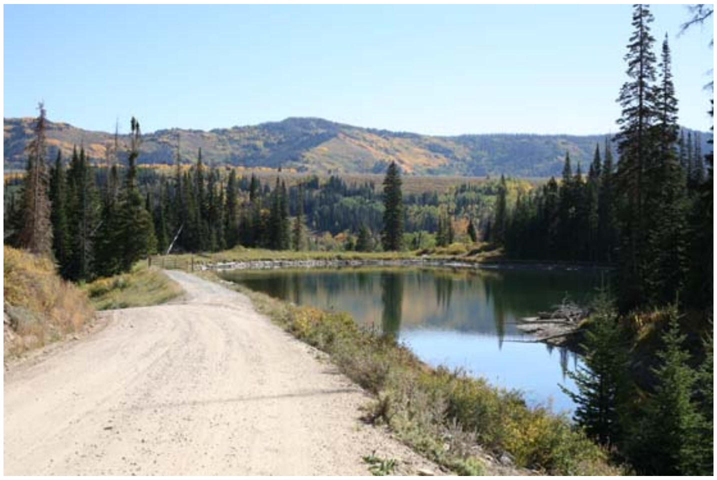
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



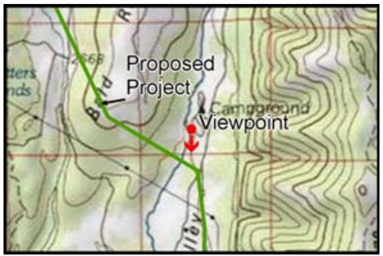
View east from Potters Pond, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated by the Manti-La Sal NF as a partial retention VQO. The proposed Project crosses moderately steep terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access would introduce curvilinear lines into the landscape as roads would be built to access towers on moderately steep slopes. Vegetation clearing within the right-of-way would create geometric forms and a butt edge in the vegetation. The proposed structures would be seen at approximately 0.75 mile and introduce a strong structure contrast. Through the application of selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing), contrast associated with the proposed Project would be reduced.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 195 Indian Creek Campground	Township: 16S Range: 6E	
VRM Class/VQO: Partial Retention	Section: 10	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded	Vertical, complex, pyramidal, amorphous	Vertical, geometric
Line	Curving, continuous	Flowing, complex, irregular	Complex, angular
Color	Tans, grays	Vivid, greens, tans, seasonal variation	Gray, transparent
Texture	Medium to coarse grain	Coarse grain, dense	Medium grain, sparse density, matted, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Angular, bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form	■				■				■			
Line		■			■					■		
Color		■				■				■		
Texture		■				■				■		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

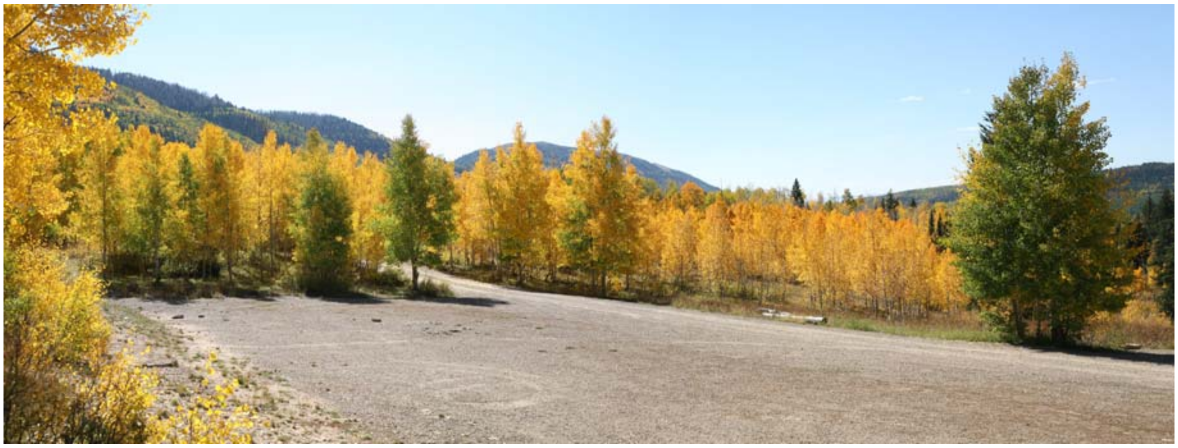
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Indian Creek Campground, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting viewed from the Indian Creek Campground within lands designated by the Manti-La Sal NF as a partial retention VQO. The proposed Project would cross steep terrain as it descends into the Wasatch Plateau Park landscape where level to rolling terrain would be traversed. Disturbance associated with the construction of access roads and vegetation clearing in the right-of-way would be mostly screened by vegetation except on steep terrain across the Wasatch Plateau landscape. In this area, these disturbances would introduce additional geometric forms in the landscape generating a moderate/strong contrast. The proposed structures would be seen from 0.3 mile away and would be skylined above the trees in the foreground. Through modification of the proposed structure type in this area, shorter H-frame structures would be utilized to reduce the dominance of skylined structures. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would also be applied to reduce landscape contrast where the proposed Project traverses steeper terrain.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name:
Energy Gateway South Transmission Project

Key Observation Point
196 Fairview Lakes residential

VRM Class/VQO:
Partial Retention

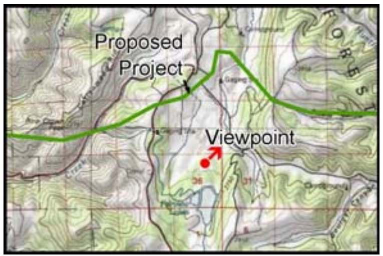
Location:

Township: 13S

Range: 5E

Section: 36

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Wide trough-shaped, rolling, rounded	Vertical, complex, pyramidal, amorphous patches	Low, geometric
Line	Curving, continuous, diagonal	Flowing, complex, irregular, butt edges	Angular, vertical
Color	Tans	Vivid, greens, tans, seasonal variation	Browns and greens
Texture	Fine to medium grain	Medium to coarse grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin, triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■				■		
	Line		■				■				■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

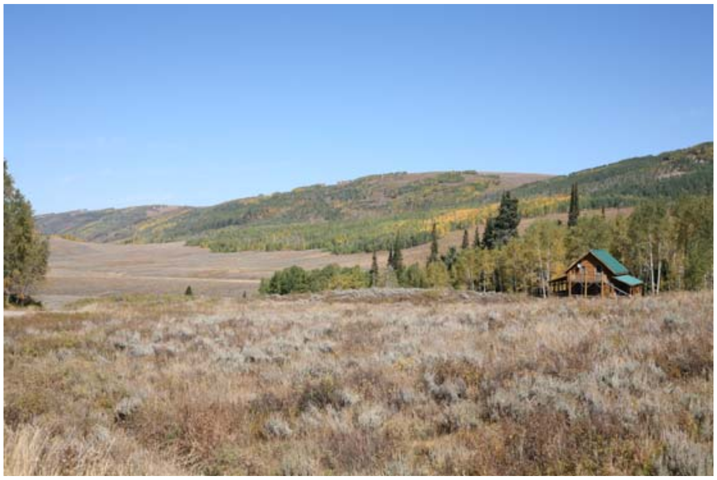
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



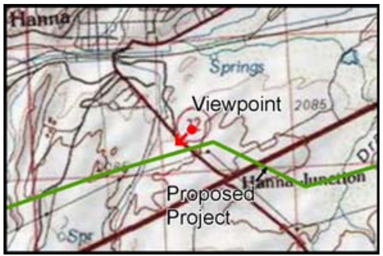
View northeast from residences north of the Fairview Lakes, Utah

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting designated by the Manti-La Sal NF as a partial retention VQO as viewed from residences adjacent to Fairview Lakes. The proposed Project would cross moderately steep terrain and would be backdropped by adjacent terrain. Disturbance generated from the construction of access roads tower pads as well as right-of-way vegetation clearing would primarily be screened by vegetation except where the proposed Project crosses the saddle between the two mountains on the east side of the valley. In this location, these disturbances would develop a weak/moderate landscape contrast through the introduction of geometric forms and curvilinear lines incongruent with the existing landscape character. The proposed structures would be seen at approximately 1.8 miles in a level to slightly inferior viewer position and would produce a moderate level of structure contrast. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/6/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 22N	Location Sketch
Key Observation Point # 197 Hanna residential	Range: 81W	
VRM Class/VQO: n/a	Section: 20	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling	Tall pyramidal, low amorphous patch	Vertical, geometric, rectangular (homes)
Line	Gently undulating, horizontal	Indistinct, weak diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans, grays (road)	Greens, tans	Grays and browns, varying color (homes)
Texture	Fine grain, smooth	Coarse to fine grain	Medium density and grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric, thin horizontal clearing(s) for tower pads and	Cleared geometric, horizontal clearings for tower pads and access	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Diagonal, horizontal and undulating	Creating butt edge(s) at clearings	Diagonal, horizontal; concave (conductors)
Color	Contrasting tans from soil disturbance for clearings	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			▨				▨		▨			
Elements: Line			▨			▨				▨		
Elements: Color			▨				▨		▨			
Elements: Texture			▨				▨		▨			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

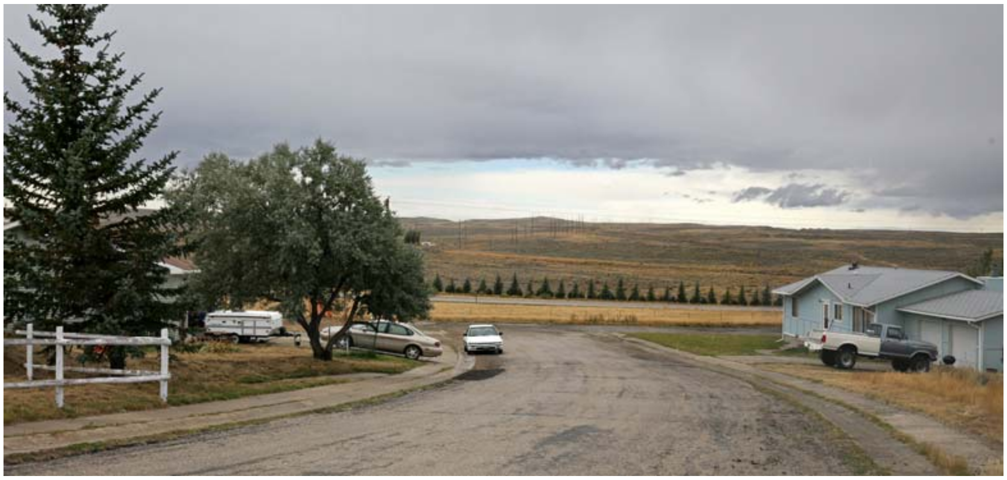
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/6/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



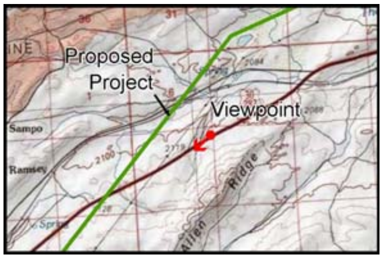
View southwest from Linda Drive, Hanna, Wyoming

Moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting associated with residences in Hanna, Wyoming. The proposed Project would cross through rolling terrain in a skylined condition. Disturbance associated with construction access and tower pads would weakly contrast with the existing landform's form, line, color, and texture. Weak contrast with existing vegetation patterns would occur because after revegetation, the areas cleared for construction would begin to blend with the existing low-growing vegetation. The proposed structures and conductors would be seen at approximately 0.5 mile as it parallels an existing transmission line. The proposed structures would be much larger than the existing; therefore, would strongly contrast with the existing structural elements in the landscape.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/6/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 198 U.S. Highway 30 (east of Hanna)	Township: 22N	
	Range: 80W	
VRM Class/VQO: IV	Section: 7	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling	Indistinct, amorphous and geometric patches	Vertical, geometric
Line	Gently curving, undulating horizontal	Butt and weak diffuse edges	Vertical/diagonal; thin/weak concave (conductors)
Color	Browns, tans, grays (roads)	Greens, tans, grays, yellow	Brown, gray
Texture	Fine grain, smooth	Fine to medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin, triangular
Line	n/a	n/a	Vertical/diagonal; thin/weak concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨		▨		
	Line				▨				▨		▨		
	Color				▨				▨			▨	
	Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

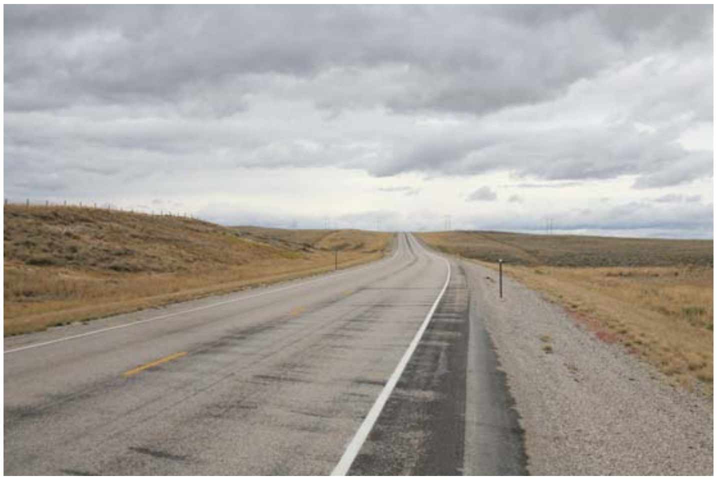
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/6/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from U.S. Highway 30, Wyoming

Weak/moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting associated with U.S. Highway 30. The proposed Project would be seen from a level position with intermittent screening with portions of structures and conductors skylined through rolling terrain. Disturbance associated with construction access and tower pads would not be visible from this KOP. The proposed structures and conductors would be visible at approximately 1.5 miles and would generate a weak/moderate structure contrast as portions of the project structures would be visible above the horizon behind an existing 230kV transmission line. To reduce contrast, selective mitigation measure #9 (maximize span length) would be applied to decrease dominance of transmission structures being located adjacent to the highway.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/24/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

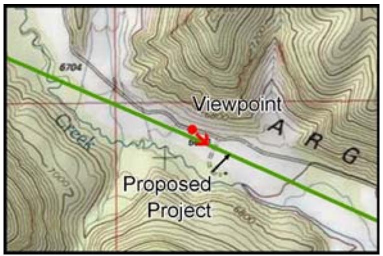
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
200 Argyle Canyon Road

VRM Class/VQO:
III

Location:
Township: 11S
Range: 13E
Section: 27

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	V-shaped, bold, steep, level valley	Numerous, irregular	n/a
Line	Diagonal, angular, jagged, horizontal	Broken, flowing, angular	n/a
Color	Tans and grays	Variety of greens, tans, little seasonal variation	n/a
Texture	Medium, granular, fine grain in valley	Random, scattered, fine to medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal, pyramidal	Low, rectangular clearings (tower pads)	Bold, vertical, rhythmic and diminishing; complex
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans and grays	Tans, gray-greens	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating/diminishing coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

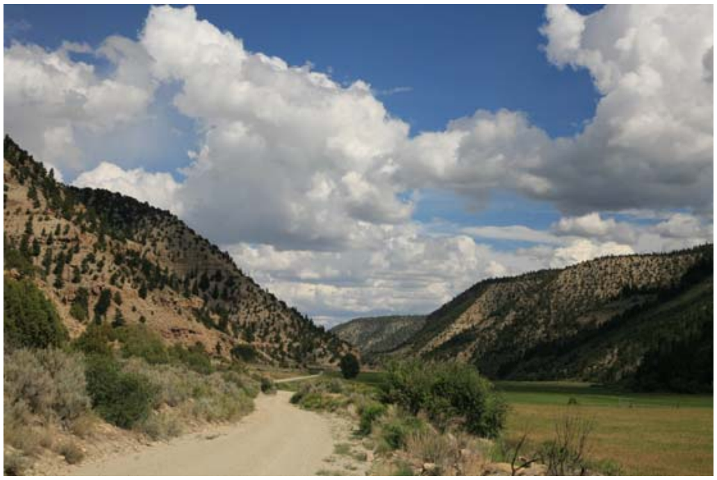
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/24/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View east from Argyle Canyon Road, Utah

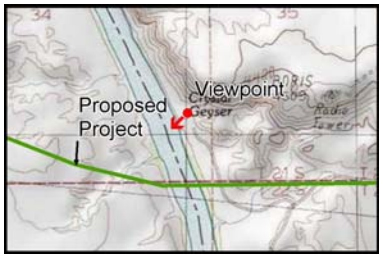
Strong contrast would result from the construction and operation of the proposed Project within this enclosed landscape setting designated as VRM Class III viewed from Argyle Canyon Road. The proposed Project would be located algon the flat valley floor between the steep side slopes of the canyon. Disturbance associated with right-of-way clearing would be minimal due to the low-growing vegetation present along the valley floor. The proposed structures, located less than 0.25 mile away, would become a dominant feature and produce an ordered, rhythmic element in this landscape. Due to the proximity to the viewer, the proposed Project would not be compliant with the definition of BLM VRM Class III. There are limited opportunities to mitigate the proposed Project as any adjustment of the alignment would move the proposed Project into extremely steep terrain which would further increase visual contrast.

The location of a route variation, which crosses the canyon perpendicularly, would greatly reduce contrast and due to the short-duration view, would be compliant with the definition of BLM VRM Class III.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 21S	Location Sketch
Key Observation Point # 201 Crystal Geyser	Range: 16E	
VRM Class/VQO: III	Section: 34	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Curving band (river), rolling to level	Continuous strip of riparian vegetation, stippled	Vertical, geometric
Line	Complex, diagonal, horizontal	Undulating, weak, diffuse edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans, reds	Variety of greens, browns	Brown, gray
Texture	Rippled to smooth, glossy (river), rough, striated	Fine to medium grain (river corridor), sparse, medium grain	Repeating coarse to medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans, reds	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line		■					■				■	
	Color			■				■			■		
	Texture		■					■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

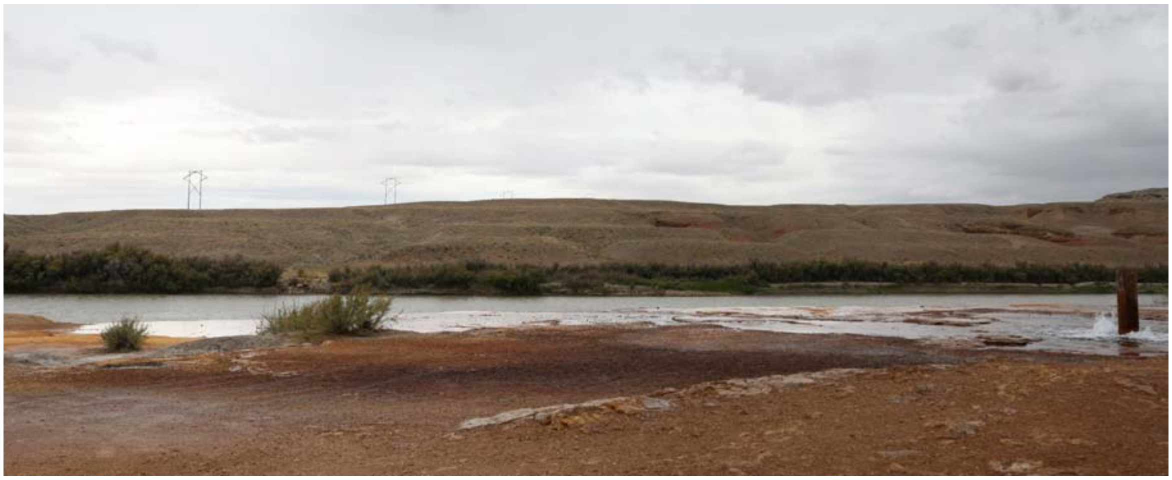
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from Crystal Geyser, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III and viewed from Crystal Geyser. The proposed Project traverses gently rolling terrain and due to the low-growing vegetation in the right-of-way, contrast from vegetation clearing would be minimal. Construction access roads would introduce curvilinear lines into the landscape that would produce a weak/moderate landscape contrast. The proposed structures would be seen approximately 0.5 mile away in a skylined condition adjacent to an existing 345kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/25/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

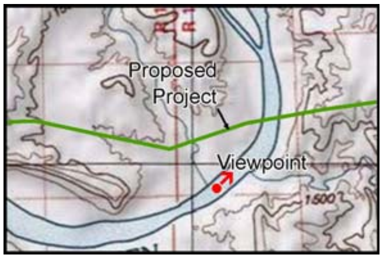
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
203 Fourmile Bottom

VRM Class/VQO:
II

Location:
Township: 10S
Range: 19E
Section: 19

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, domed, rolling to rugged	Typically low except for scattered trees in riparian corridor	n/a
Line	Undulating, angular, diagonal, horizontal	Undulating, continuous in along river; indistinct on hills	n/a
Color	Tans, browns	Variety of greens, subtle tans	n/a
Texture	Medium to coarse grain	Fine to medium grain, dense in riparian corridor, sparse and	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans, browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■					■		■			
Elements: Line			■				■			■		
Elements: Color			■				■			■		
Elements: Texture		■					■		■			

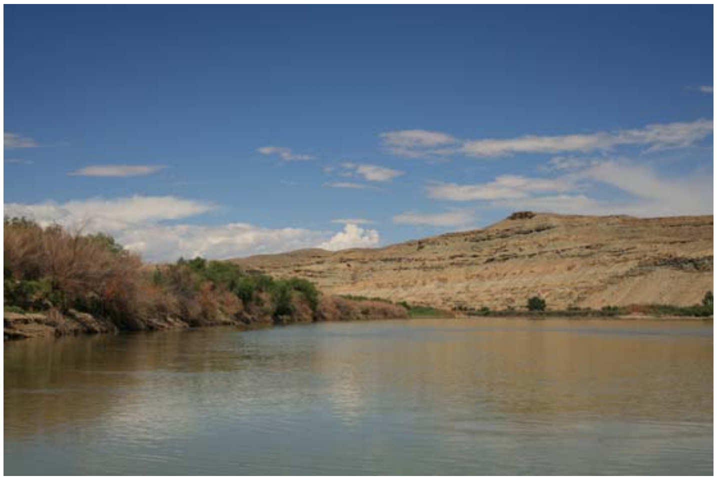
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/25/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Fourmile Bottom adjacent to the Green River, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in a landscape setting designated as VRM Class II as viewed from the Fourmile Bottom River Access Area on the Green River. The proposed Project would traverse moderately steep rolling terrain and would be skylined as it crosses the canyon ridgeline. Disturbance associated with construction access and grading of tower pads would introduce a weak/moderate contrast due to the geometric forms created by these project features. Due to the limited amount of vegetation clearing that would be seen from this KOP, contrast associated with the modification of vegetation patterns would be weak. The proposed structures would be seen at approximately 0.75 mile and would dominate views since there are few structural elements in the landscape. The application of selective mitigation measures #3 (minimize ground disturbance) and #9 (maximize span length) would reduce contrast generated by the proposed Project as viewed from the Green River. To further reduce impacts, the tower located on the top of the ridge should be moved f to the north into the saddle. This will site the Project away from a focal point in the landscape, reducing its level of dominance in this view.

VISUAL CONTRAST RATING WORKSHEET

Date: 9/26/2011
BLM Field Office/National Forest: Fillmore Field Office
Resource Area:
Activity (program): 500kV Transmission Project

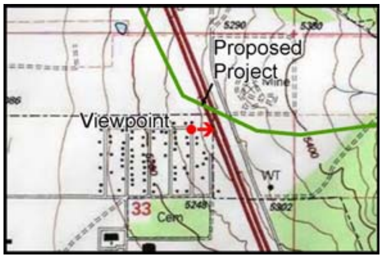
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
204 Nephi residential

VRM Class/VQO:
n/a

Location:
Township: 12S
Range: 1E
Section: 33

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, moderately steep, rolling	Amorphous and geometric patches	Vertical, geometric
Line	Undulating, diagonal, curving	Butt and diffuse edges	Complex, angular
Color	Tans	Dark greens, tans	Brown
Texture	Medium grain, continuous	Medium grain, dense to sparse	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, rhythmic; geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■				■		
	Line		■				■					■	
	Color			■				■			■		
	Texture			■				■				■	

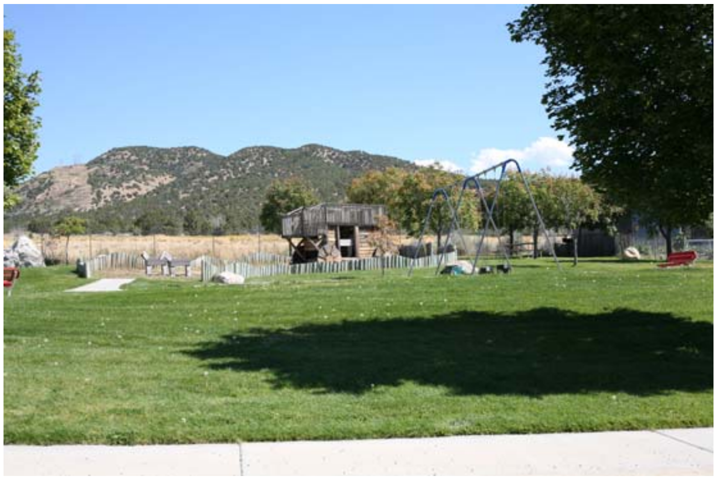
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



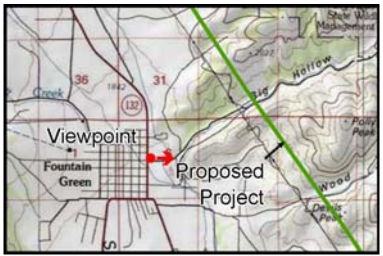
View east from residences along 1450 North in Nephi, Utah

Moderate contrast would result from the construction of the proposed Project within an enclosed landscape setting as viewed from residences within Nephi, Utah. The proposed Project would cross steep terrain and would be partially skylined across the foothills landscape. Disturbance associated with construction access roads and clearing of vegetation within the right-of-way would introduce additional geometric forms into the landscape. The proposed structures would be seen 0.6 mile away from an inferior viewing position in context with existing transmission lines. Due to the proximity of the existing transmission lines, a weak/moderate structure contrast is anticipated from this viewpoint. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast produced by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 205 Fountain Green residential	Township: 14S Range: 3E	
VRM Class/VQO: III	Section: 6	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Domed, rolling, undulating	Stippled areas and amorphous patches	Low, geometric
Line	Curving, angular	Butt to diffuse edges	Horizontal, diagonal
Color	Tans, reds	Dark greens, gray-green, tans	Grays, browns
Texture	Medium grain	Fine to medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin, triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans, reds	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform medium grain, medium to sparse density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■				■				■		
Elements: Line			■				■			■		
Elements: Color			■				■				■	
Elements: Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

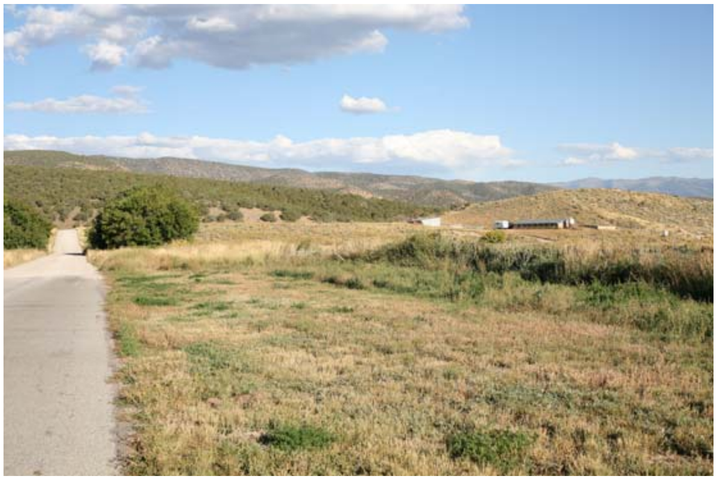
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View east from residences on east side of Fountain Green, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III viewed from residences in Fountain Green. The proposed Project crosses moderately steep terrain and would be backdropped by the adjacent terrain. Disturbance related to the construction of access roads and clearing of vegetation in the right-of-way would be partially screened by terrain in the foreground but where visible, would produce weak/moderate landscape contrast. The proposed structures would be viewed from an inferior viewing position approximately 1.5 miles away in context with an existing 345kV and 138kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

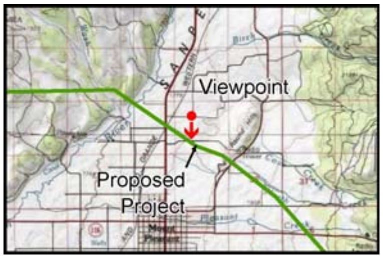
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
206 Dispersed residences north of Mt. Pleasant

VRM Class/VQO:
n/a

Location:
Township: 14S
Range: 4E
Section: 26

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/slightly concave to gently rolling	Low distinct patches, with areas of stippling	Weak vertical, geometric
Line	Continuous, horizontal, undulating, simple	Butt edges between agricultural fields,	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, browns	Greens, tans	Tans, whites, browns
Texture	Fine grain	Fine to medium grain	Fine grain, medium density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Bold, vertical, rhythmic; complex geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■		■			
Elements: Line			■				■			■		
Elements: Color			■				■			■		
Elements: Texture			■				■			■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

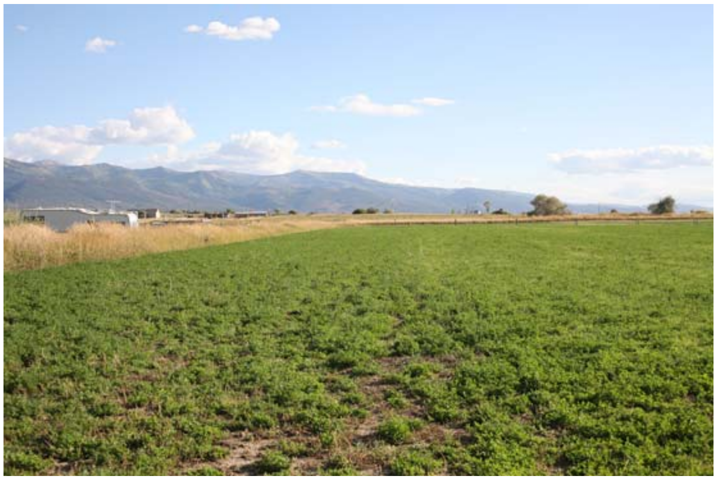
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from road adjacent to residence north of Mount Pleasant, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project, within a panoramic landscape setting as viewed from residences north of Mount Pleasant. The proposed Project crosses flat to gently rolling terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access and right-of-way clearing would be mostly screened by topography but where visible, would introduce geometric forms and curvilinear lines into the landscape . The proposed structures would be seen at approximately 0.5 mile with an existing 345kV transmission line visible 0.8 mile away. The proposed Project would introduce moderate to moderate/strong structure contrast due to the proximity of the proposed Project to these viewers with unobstructed views.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

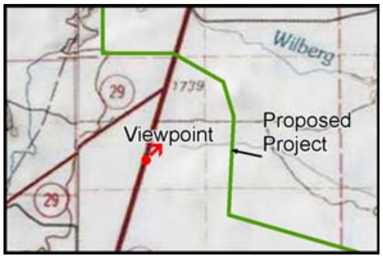
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
207 Dispersed residences northeast of Castle Dale

VRM Class/VQO:
n/a

Location:
Township: 18S
Range: 8E
Section: 23

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow slopes, level to rolling slopes	Indistinct, patches, stippled	Geometric, transparent
Line	Horizontal, broken diagonal	Indistinct, diffuse edges	Vertical, horizontal; concave (conductors)
Color	Tans	Gray-greens, yellows, tans	Dull gray, transparent
Texture	Fine to medium grain	Medium grain	Medium grain, medium density, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic ; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨			▨		
	Line			▨				▨				▨	
	Color			▨				▨				▨	
	Texture			▨				▨				▨	

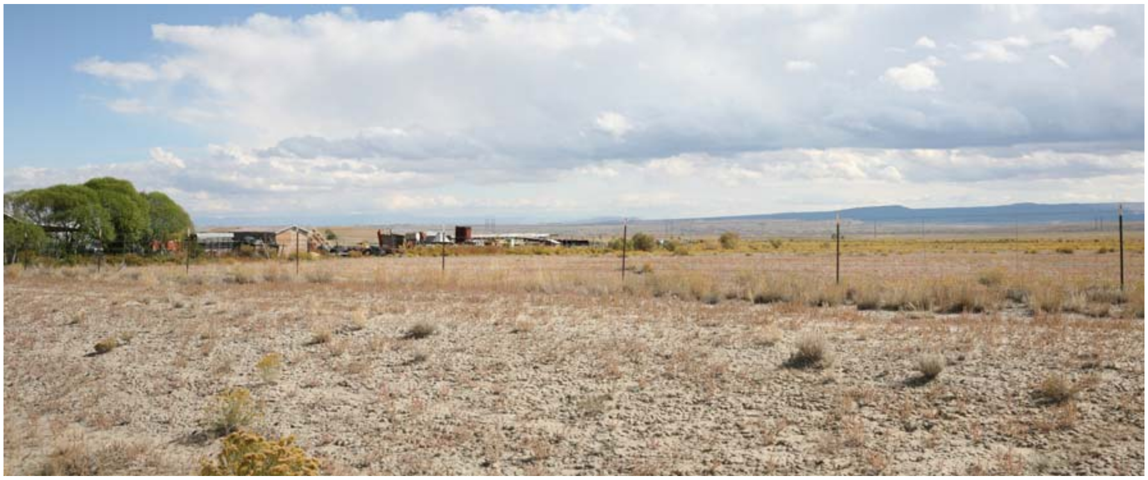
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



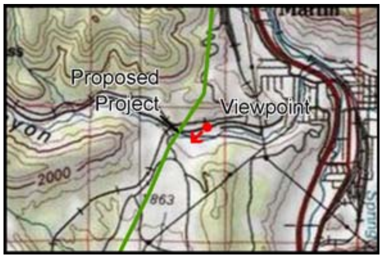
View northeast from residence along Utah State Route 10, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting associated with views from residences northeast of Castle Dale. The proposed Project would cross flat terrain and would be partially backdropped by adjacent terrain. Disturbance generated by construction access roads and tower pads as well as right-of-way vegetation clearing would mostly be screened from view but where visible, would introduce geometric forms and curvilinear lines into the landscape. The proposed structures would be seen 0.6 mile away in context with two existing 345kV transmission lines.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 13S	Location Sketch
Key Observation Point # 208 west Helper residential	Range: 9E	
VRM Class/VQO: n/a	Section: 23	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Plateaus, level BG: Bold vertical, horizontal, rugged	Amorphous masses, stippled areas	Geometric, vertical
Line	Vertical, diagonal, angular	Weak, diffuse, indistinct	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays, reds	Dark greens	Brown
Texture	Banded, course grain	Fine to medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Stippled vegetation	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Diffuse edge	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays, reds	Tans, gray-greens	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■			■			■			
	Line		■					■		■			
	Color			■				■		■			
	Texture		■					■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

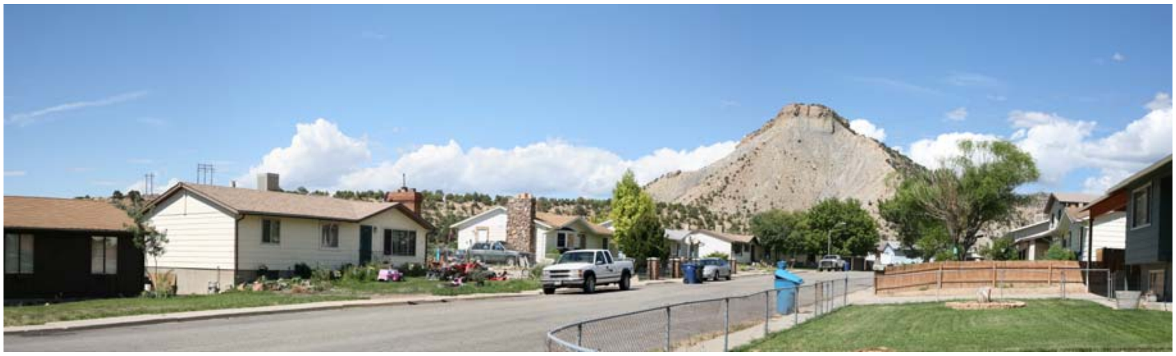
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



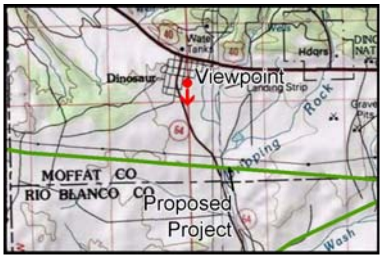
View southwest from residences on the west side of Helper, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within a focal landscape viewed from residences located along the west side of Helper, Utah. The proposed Project crosses rolling terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access would introduce additional curvilinear lines and geometric forms into the landscape. Clearing of vegetation within the right-of-way would be mostly screened from view but where visible, would produce geometric forms incongruent with existing vegetation patterns. The proposed structures would be seen at 0.3 mile and due to the proximity to the viewers, would introduce a strong structure contrast even though the proposed Project would be seen in context with an existing small transmission line and railroad line. Skylined structures would be viewed on the distant ridge adjacent to the existing transmission line as well as skylined over the rooflines of residences viewed from this location. Due to the scattered residences located further up the canyon, there are limited opportunities to mitigate the proposed Project through an adjustment of the centerline without transferring impacts to another group of residences. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied but these would not reduce contrast associated with the introduction of the additional transmission structures.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 3N	Location Sketch
Key Observation Point # 210 Dinosaur residential	Range: 103W	
VRM Class/VQO: III	Section: 7	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/slightly concave to gently rolling	Low indistinct and geometric patches, stippled and clumped areas	Vertical, geometric, rectangular
Line	Continuous, horizontal, undulating, simple	Indistinct, weak diffuse and butt edges	Vertical, horizontal
Color	Light gray, tans, light brown, subtle	Sage, greens, tans	Subtle grays, browns greens, whites
Texture	Fine grain	Fine to medium grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨		▨		
	Line				▨				▨		▨		
	Color				▨				▨		▨		
	Texture				▨				▨		▨		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

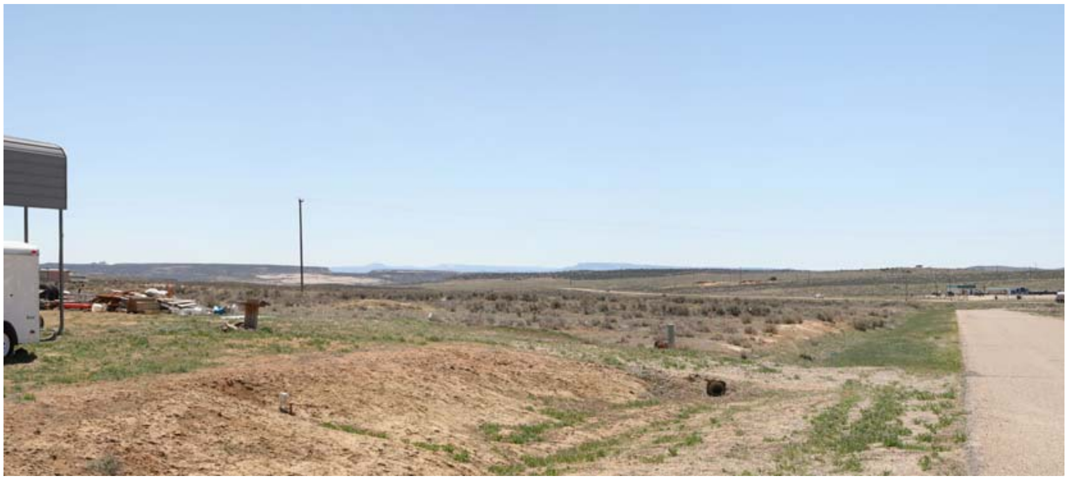
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Brachiosaurus Street, Dinosaur, Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation and associated with residential views from Dinosaur, Colorado. The proposed Project would cross low rolling terrain in a partially backdropped condition. Construction access and tower pad disturbance to landform and vegetation would not be visible from the KOP. The proposed structures and conductors would be seen at approximately 1 mile paralleling an existing transmission line. The proposed structures would be larger and introduce moderate contrast due to the relative scale when compared to the existing transmission line structures.

VISUAL CONTRAST RATING WORKSHEET

Date: 9/26/2011
BLM Field Office/National Forest: White River Field Office
Resource Area:
Activity (program): 500kV Transmission Project

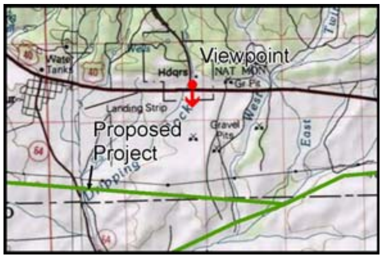
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
211 Dinosaur National Monument Visitor Center

VRM Class/VQO:
III

Location:
Township: 3N
Range: 103W
Section: 8

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat gently rolling, layered horizontal	Low indistinct patches, stippled and clumped in areas	Thin vertical, geometric, rectangular
Line	Horizontal, undulating, simple	Indistinct, weak diffuse edges and butt edges	Vertical, horizontal
Color	Tans, light brown, gray, black	Sage, greens, tans, yellow	Grays, brown
Texture	Fine grain	Fine to medium grain	Coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, rhythmic and diminishing; geometric/triangular
Line	n/a	n/a	Vertical/diagonal, horizontal; weak concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform medium grain, medium to sparse density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form				▨				▨		▨		
Line				▨				▨		▨		
Color				▨				▨		▨		
Texture				▨				▨		▨		

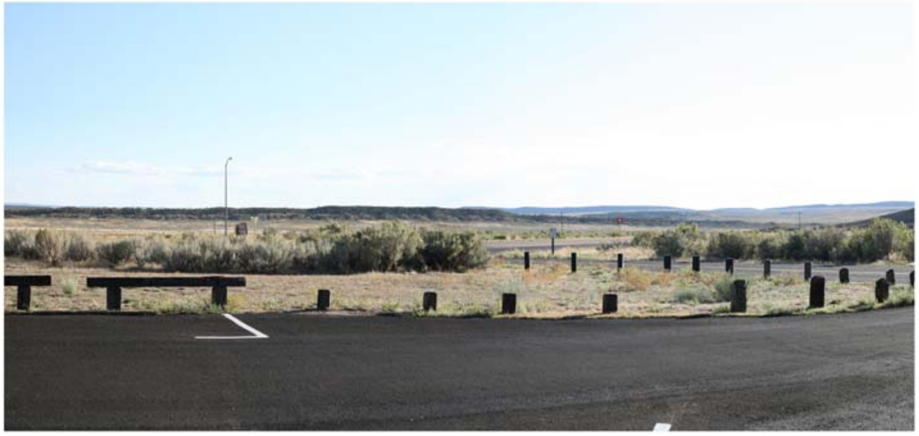
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



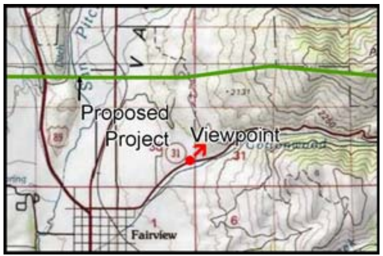
View south from Canyon Visitor Center for Dinosaur National Monument, Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III and associated with views from the Canyon Visitor Center at Dinosaur National Monument. The proposed Project would cross low rolling terrain in a skylined condition. Construction access and tower pad disturbance to landform and vegetation would not be visible from the KOP. The proposed Project structures and conductors would be seen at approximately 1.5 miles and introduce a moderate structure contrast. The proposed Project would parallel an existing transmission line, but the existing transmission is backdropped and intermittently screened while the proposed Project would be viewed in an unobstructed and skylined condition.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 13S	Location Sketch
Key Observation Point # 212 Fairview residential	Range: 4E	
VRM Class/VQO: n/a	Section: 36	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Level, undulating, rolling	Vertical, amorphous patches, stippled areas	Thin, geometric
Line	Diagonal, curving	Flowing, complex, diffuse and butt edges	Vertical, horizontal
Color	Tans, whites	Greens, tans, seasonal variation	Browns
Texture	Medium to fine grain	Medium grain	Medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin, triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans, whites	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform medium grain, medium to sparse density

Degree of Contrast

	Features												
	Landform/ Water Body				Vegetation				Structures				
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■			■				■			
Line		■			■					■		
Color			■			■			■			
Texture		■				■				■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

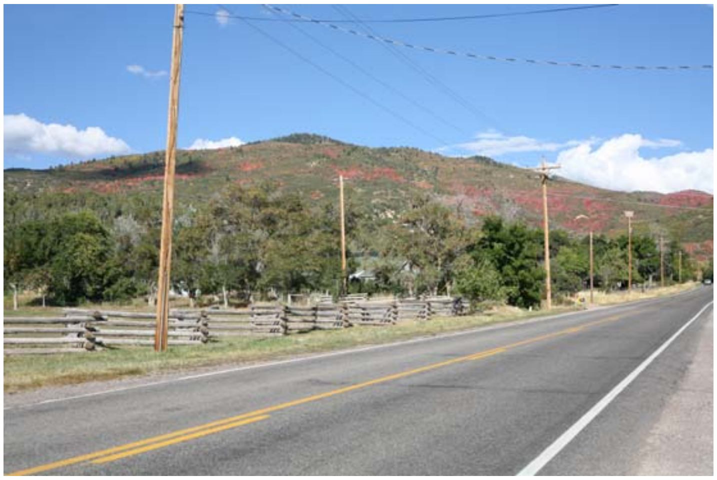
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Utah State Route 31 adjacent to residences east of Fairview, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from residences east of Fairview. The proposed Project crosses steep terrain and would be backdropped by adjacent terrain. Disturbances related to construction of access roads and clearing of vegetation in the right-of-way would be partially screened by vegetation in the foreground. Where visible, these elements would produce a moderate to moderate/strong landscape contrast through the introduction of geometric forms and curvilinear lines. The proposed structures would be seen from an inferior viewer position 1.2 miles away. Application of selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast produced by access road construction and right-of-way vegetation clearing.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

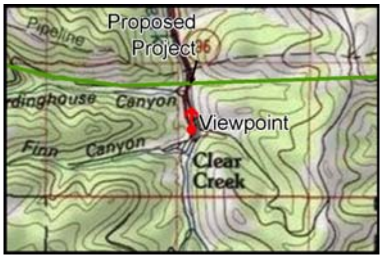
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
213 Clear Creek residential

VRM Class/VQO:
n/a

Location:
Township: 13S
Range: 7E
Section: 33

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded	Vertical, complex, pyramidal, amorphous	Geometric, horizontal, rectangular
Line	Curving, continuous	Flowing, complex, irregular	Vertical, angular, regular
Color	Tans, grays	Vivid, yellow, greens, seasonal variety	Brown, gray
Texture	Medium grain	Coarse, stippled, scattered	Coarse grain, sparse density, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Bold, vertical; complex geometric/triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨	▨			
	Line				▨				▨		▨		
	Color				▨				▨		▨		
	Texture				▨				▨		▨		

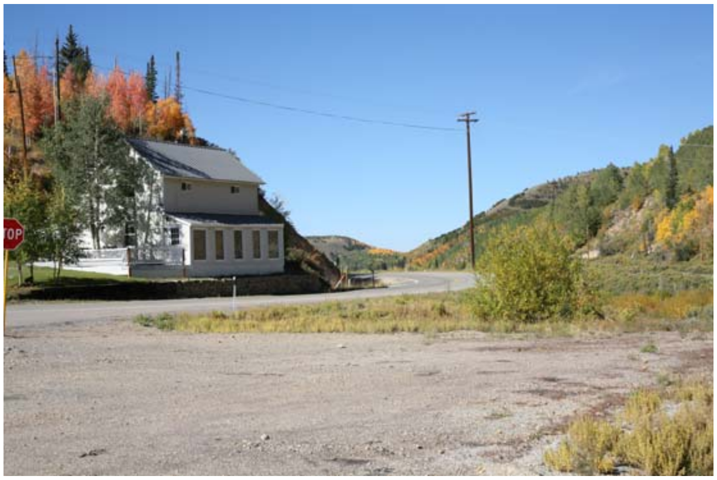
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

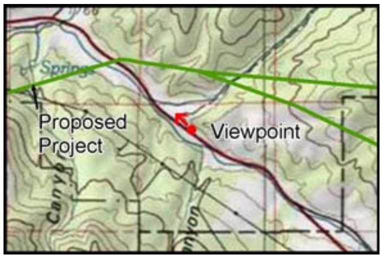


View north from Clear Creek Residences, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting from residences in Clear Creek. The proposed Project crosses steep terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access and right-of-clearing would be screened by topography and vegetation; therefore, disturbance to these features would not be visible from this KOP. The proposed structures would be seen at approximately 0.5 mile with a small distribution power line in the foreground. Selective mitigation measure #9 (maximize span length) would reduce contrast by limiting the number of towers visible from this viewpoint by spacing the towers as far apart as practicable at the canyon crossing.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 214 Utah State Route 132 (north of Fountain Green)	Township: 13S Range: 2E	
VRM Class/VQO: n/a	Section: 10	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling, smooth, Mount Nebo is prominent in background	Stippled and loose amorphous patches	n/a
Line	Smooth, angular, simple, horizontal	Diffuse edges, irregular	n/a
Color	Tans	Dark greens, sage greens, tans, grays	n/a
Texture	Medium grain	Fine to medium grain, uneven/random	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨		▨			
	Line			▨				▨			▨		
	Color			▨				▨			▨		
	Texture			▨				▨		▨			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

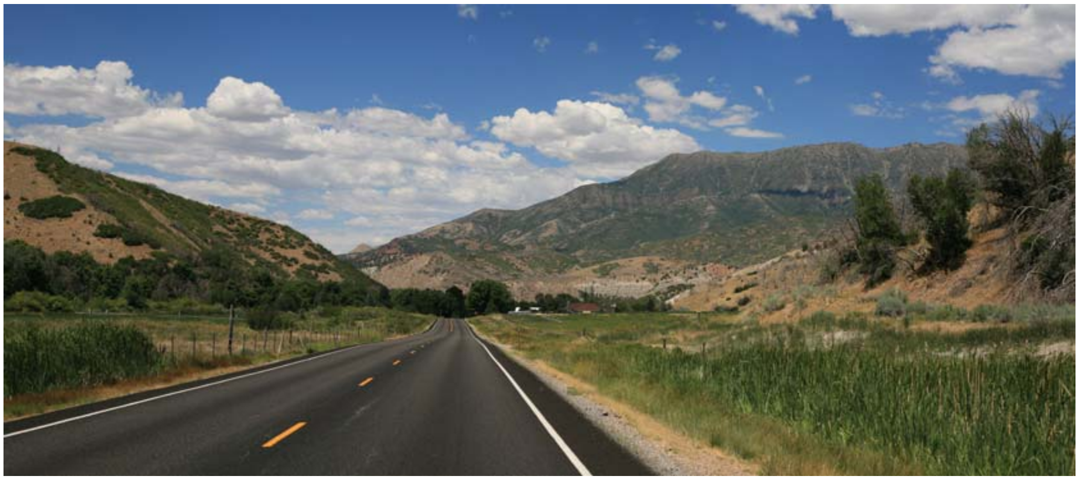
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



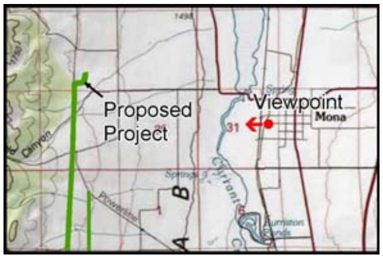
View northwest from Utah State Route 132 north of Fountain Green

Moderate/strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from Utah State Route 132. The proposed Project traverses moderately steep slopes and would be located along the top of the ridge, but would be backdropped by Mount Nebo in the background. Disturbance associated with construction access and vegetation clearing in the right-of-way would be mostly screened from view at this location but where visible, would introduce weak geometric forms. The proposed structures would be seen 0.5 miles away with views of the existing transmission lines screened by topography; therefore, a moderate/strong structure contrast would be produced by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	345kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 11S	Location Sketch
Key Observation Point # 215 Mona residential	Range: 1E	
VRM Class/VQO: III	Section: 31	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, slightly concave	Low geometric patches, stippled areas	Vertical, geometric
Line	Continuous, horizontal	Diagonal, horizontal, butt edges	Vertical/diagonal; thin/weak concave (conductors)
Color	Grays, tans	Dark greens, bright greens, gray-greens, yellow, light brown	Grays, browns, tans
Texture	Uniform, fine grain	Fine to medium grain	Medium to coarse grain, medium density, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

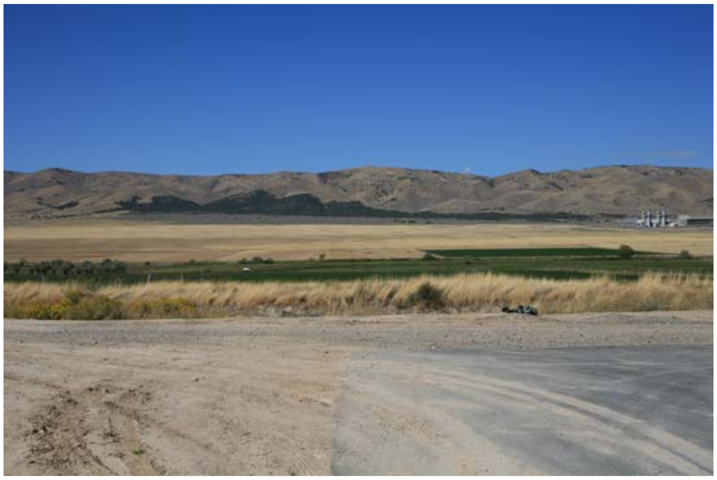
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	345kV Transmission Project



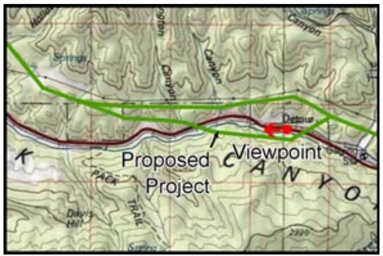
View west from residences in Mona, Utah

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting associated with residences in Mona, Utah. The proposed Project would be seen in a backdropped condition from a level viewing position as the proposed Project traverses through relatively flat terrain. Disturbance associated with construction access and tower pads would weakly contrast with existing landform and vegetation elements of form, line, color, and texture due to the level terrain and the low-growing vegetation. The proposed structures and conductors would be visible approximately 2 miles away and would weakly contrast with existing structural elements as existing transmission lines with similar design characteristics and energy generation facilities occur within this view.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 216 U.S. Highway 6 (west of Soldier Summit)	Township: 10S Range: 6E	
VRM Class/VQO: Partial Retention	Section: 15	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Domed, bold, rugged	Stippled areas on slopes, amorphous patches	Vertical, geometric
Line	Diagonal, hard	Diffuse edges, irregular	Vertical; thin concave (conductors)
Color	Grays, tans	Dark greens, tans	Grays, transparent, browns
Texture	Medium to coarse grain, smooth surface texture	Medium to coarse grain, uneven/random	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Bold, vertical; complex geometric/triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨		▨		
	Line				▨				▨		▨		
	Color				▨				▨			▨	
	Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

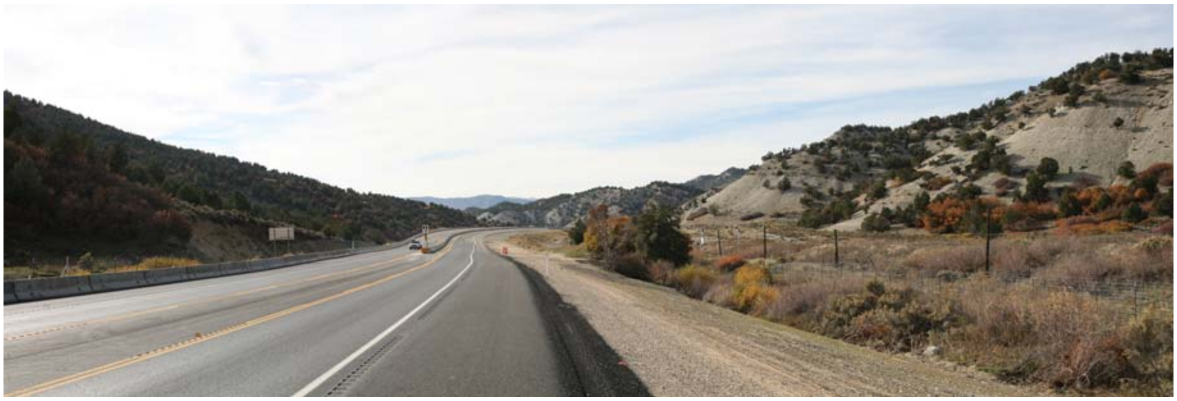
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View west from U.S. Highway 6 west of Soldier Summit, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting in land designated by the Uinta-Wasatch-Cache National Forest as a partial retention VQO and viewed to the north from U.S. Highway 6. The proposed Project crosses flat to gently rolling terrain and would be partially skylined as it crosses along the steep terrain located to the north of the highway. Disturbances associated with construction access and right-of-way vegetation clearing would be screened by topography from this location. The proposed structures would be seen approximately 0.5 mile away from an inferior viewing position in context with three existing transmission lines (two 345kV and one 138kV).

Additionally, there is a route variation located south of U.S. Highway 6 on privately-owned lands. The Project would introduce geometric vegetation clearing within the Project right-of-way and unobstructed views of proposed structures. These modifications would result in a moderate to moderate/strong level contrast. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied but these would not reduce contrast associated with the introduction of the additional transmission structures.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

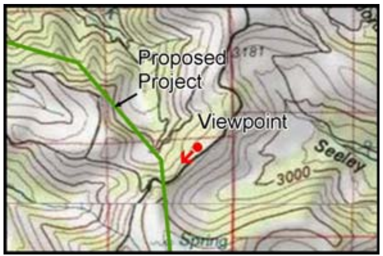
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
217 Skyline Drive Scenic Backway

VRM Class/VQO:
Partial Retention

Location:
Township: 15S
Range: 5E
Section: 24

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, diagonal, solid	Stippled areas, amorphous patches	n/a
Line	Diagonal, flowing, bold	Butt edges	n/a
Color	Tans, grays	Variety of greens, tans, grays	n/a
Texture	Coarse grain	Medium to coarse grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, rhythmic; geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	■				■				■			
	Line	■					■			■			
	Color		■				■			■			
	Texture	■					■			■			

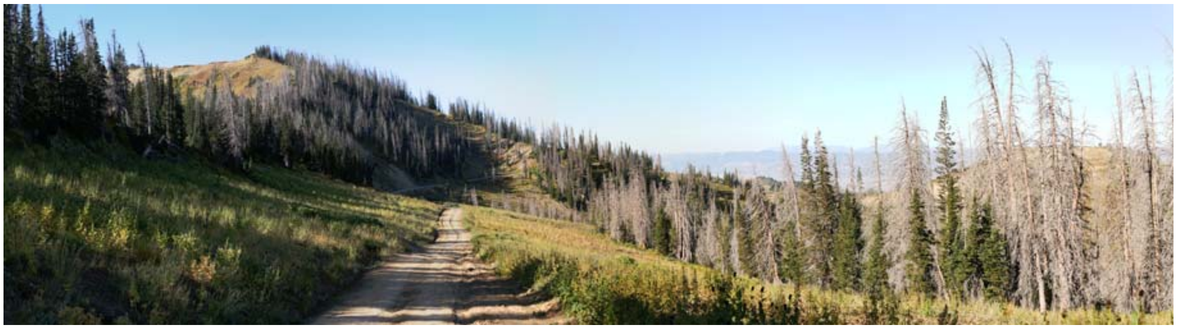
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

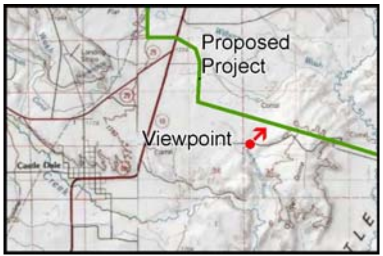


View southwest from Skyline Drive Scenic Backway, Utah

Moderate/strong to strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated by the Manti-La Sal National Forest as a partial retention VQO. The proposed Project crosses steep terrain and would be partially backdropped by adjacent terrain. Disturbance associated with construction access would produce curvilinear lines and large geometric forms in the landscape through associated earthwork. Areas of right-of-way vegetation clearing would introduce geometric vegetation patterns incongruent with the existing landscape character. The proposed structures would be seen 0.3 mile away from this location where the existing 345kV transmission line would not be visible. By relocating the proposed Project to be adjacent to the existing transmission line, through the application of selective mitigation measure #7, views of the proposed Project would be mostly screened from this viewpoint. To further reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 19S	Location Sketch
Key Observation Point # 218 Wedge Overlook Scenic Backway	Range: 9E	
VRM Class/VQO: III	Section: 1	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow slopes, undulating, rugged edge	Indistinct, patches, stippled, mottled	Vertical, geometric
Line	Diagonal, horizontal, undulating	Indistinct	Vertical, concave
Color	Tans, grays	Tans, gray-greens	Brown
Texture	Medium grain	Medium grain	Medium grain, medium density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; concave (conductors)
Color	Tans, grays	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

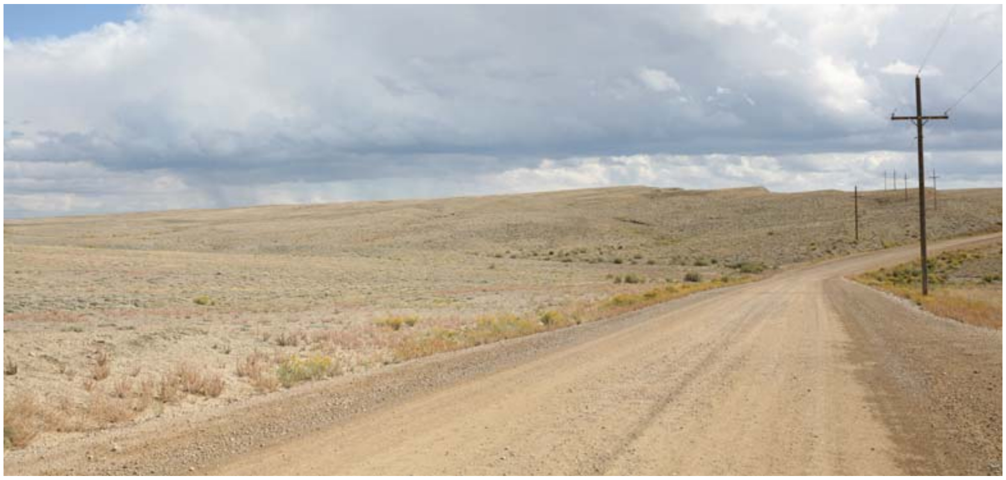
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



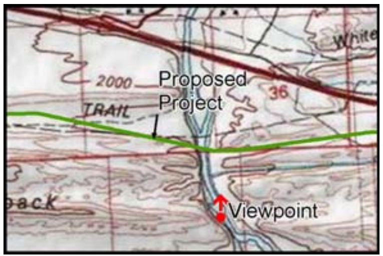
View northeast from Wedge Overlook Scenic Backway, Utah

Moderate to moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III viewed from the Wedge Overlook Scenic Backway. The proposed Project crosses rolling terrain and would be skylined from a slightly inferior viewer position. Disturbance associated with construction access would introduce a horizontal line and geometric forms into the landscape. Vegetation clearing would be limited to tower pads and access roads, which would introduce additional geometric forms contrasting with existing vegetation patterns. The proposed structures would be seen approximately 0.5 mile away introducing several skylined transmission structures and therefore, producing a moderate/strong structure contrast when compared to the small existing power line adjacent to the roadway. To effectively mitigate contrast on views from this scenic backway, the proposed Project would need to be located further to the north which would place the proposed Project outside of the designated utility corridor.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/7/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 220 North Platte River SRMA	Township: 20N Range: 85W	
VRM Class/VQO: III	Section: 3	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low, rugged, blocky and flat (river)	Indistinct, some stippled areas and amorphous patches/strips	n/a
Line	Irregular, angular, banding and horizontal	Indistinct, diffuse and strong, irregular (butt edge along banks of	n/a
Color	Browns, tans, bluish-gray	Dull and dark greens, yellows	n/a
Texture	Medium to coarse grain and smooth, rippled, reflective	Fine to coarse grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■		■			
Line			■				■		■			
Color			■				■			■		
Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

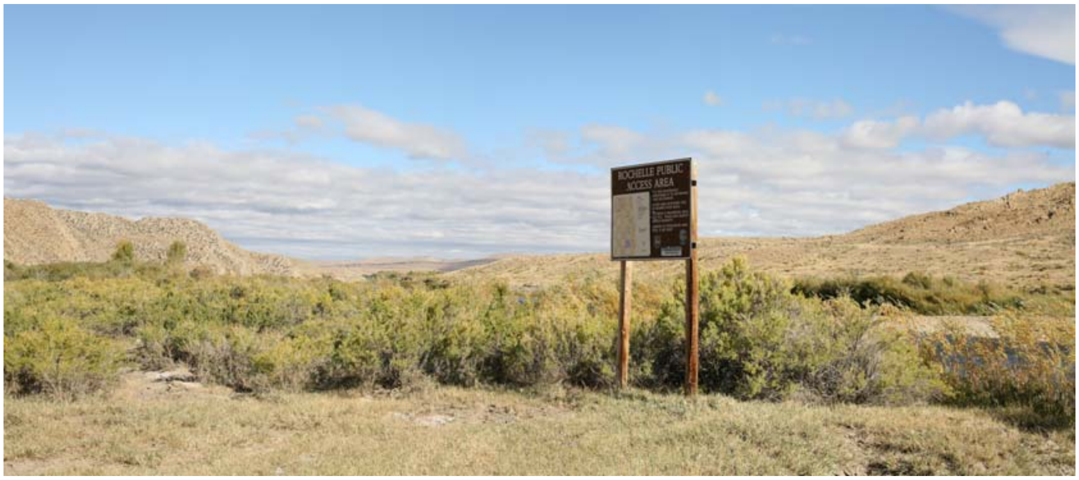
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/7/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from CR 347, Rochelle Public Access Area of the North Platte River, Wyoming

Moderate contrast would result from the construction and operation of the proposed Project in a feature/focal landscape setting associated with the Rochelle Public Access Area on the North Platte River with VRM Class IV designation. The proposed Project would be seen from a slightly inferior view as the proposed Project crosses rolling terrain in a partially backdropped and partially skylined condition. Disturbance associated with construction of access roads and tower pads would have a weak contrast with existing landforms since the majority of these ground disturbing activities would be screened from view. Weak contrast with existing vegetation patterns would occur because clearing of low-growing vegetation for access roads and tower pads would mostly be screened from view. The proposed structures and conductors would be seen 0.5 mile away and would have moderate/strong contrast with the existing landscape's structural elements due to partial topographic screening which would reduce the dominance of these structures. To further reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #9 (maximize span length) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/3/2013
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

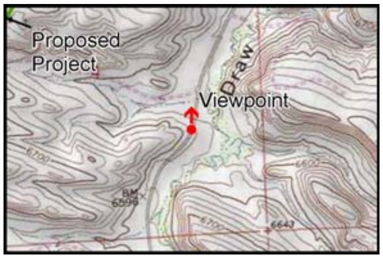
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
222 Hanna Draw Road

VRM Class/VQO:
IV

Location:
Township: 23N
Range: 81W
Section: 20

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low, rugged, blocky	Indistinct, some stippled areas and amorphous patches	n/a
Line	Irregular, angular, curving, banding	Indistinct, diffuse and butt edge (at road)	n/a
Color	Browns, tans, reddish grays (gravel road)	Dull and dark greens, tans, yellow	n/a
Texture	Fine to medium grain	Medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric clearing for tower pad and access	Cleared geometric portions for tower pads and access	Vertical, thin; geometric, triangular
Line	Horizontal, diagonal	Creating straight, diagonal butt edges at clearings	Vertical/diagonal; thin concave (conductors)
Color	Contrasting tan from soil disturbance for clearings	Remaining low growing vegetation, greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
Degree of Contrast		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■			■			■			
	Line			■			■				■		
	Color		■					■			■		
	Texture			■				■		■			

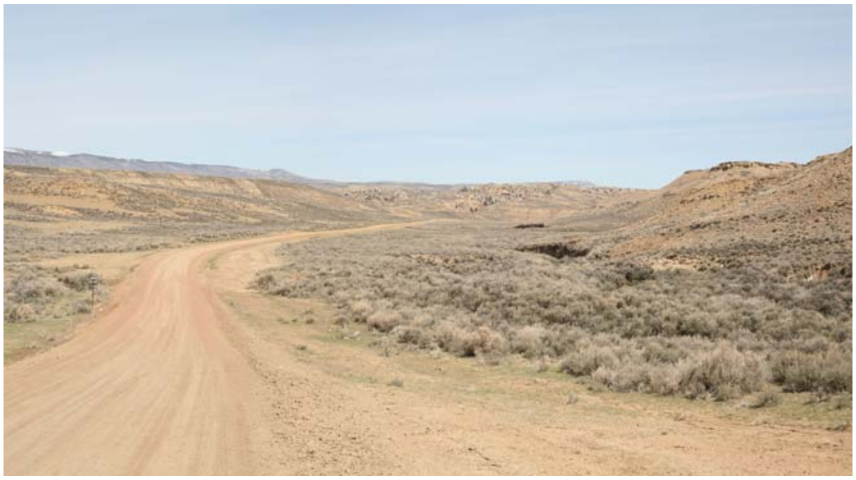
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/3/2013
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

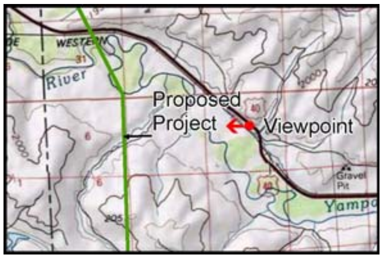


View north from Hanna Draw Road, Wyoming

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting viewed from Hanna Draw Road. The proposed Project would cross moderately steep to rolling terrain. Disturbance from the construction of access roads and tower pads would moderately contrast with the existing landforms. Weak/moderate contrast with existing vegetation patterns would occur because after revegetation, the areas cleared for construction would begin to blend with the existing low-growing vegetation. The proposed structures and conductors would be visible at approximately 0.75 mile and introduce moderate/strong structure contrast as a few structures would be skylined with other structures being backdropped by distant ridges. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #9 (maximize span length) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 223 U.S. Highway 40 (viewpoint pullout east of Craig)	Township: 6N Range: 89W	 WESTERN River Proposed Project Viewpoint 40 Gravel Pit 205 Yampa
VRM Class/VQO: n/a	Section: 4	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat to gently rolling, geometric/blocky	Tall clumping and low, amorphous and geometric patches, stippled in	Thin vertical
Line	Flat horizontal to undulating horizontal	Horizontal, vertical, diffuse and butt edges	Vertical
Color	Browns, tans, light reds	Variations of greens, tans, yellows, reds	Subtle grays
Texture	Fine grain	Medium to coarse grain	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin, triangular
Line	n/a	n/a	Vertical/diagonal; thin/weak concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform medium grain, medium to sparse density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				▨				▨			▨	
Line				▨				▨			▨	
Color				▨				▨			▨	
Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

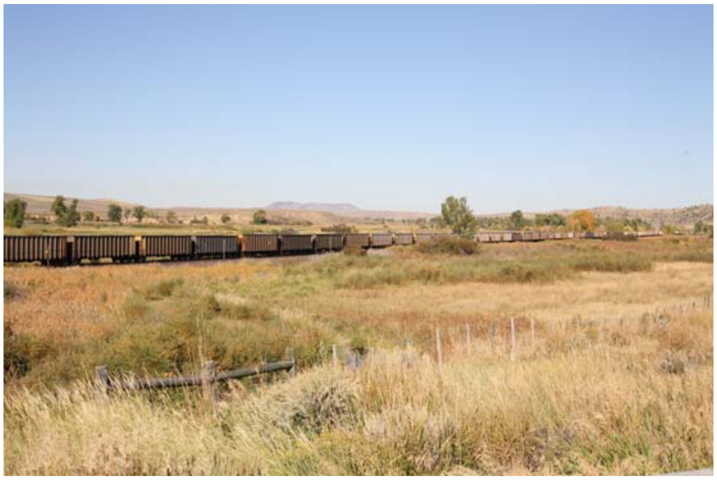
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View west from US Highway 40, Colorado

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting associated with U.S. Highway 40 and the Yampa River valley, east of Craig, Colorado. The proposed Project would be seen from a level view in an intermittently screened condition with structures skylined as the proposed Project traverses rolling terrain. Disturbance associated with construction access and tower pads would not be visible from this KOP. The proposed structures and conductors would be visible approximately 1.5 miles away and due to the screening present from this viewpoint, these structures would weakly contrast with existing structures in this landscape.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/6/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

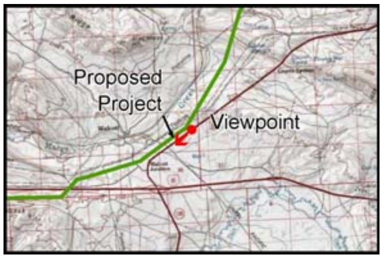
Project Name:
Energy Gateway South
Transmission Project

Key Observation Point # 224 U.S. Highway 30 (Walcott)

VRM Class/VQO:
III

Location:
Township: 21N
Range: 84W
Section: 25

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling	Amorphous and geometric patches, areas of stippling	Thin repeating vertical, geometric/rectangular
Line	Gently curving/straight band, horizontal, diagonal	Indistinct to weak diffuse edges and strong butt edges (at road,	Vertical, diagonal, broken horizontal
Color	Browns, tans, grays	Greens, tans, grays, yellows	Subtle grays, browns, white
Texture	Fine grain, smooth	Fine to medium grain	Medium grain, sparse to medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■		■			
Line			■				■		■			
Color			■				■			■		
Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

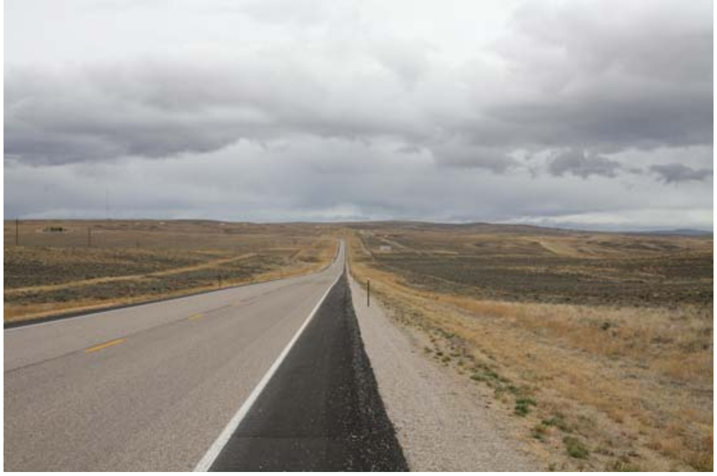
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/6/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from U.S. Highway 30, Wyoming

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class IV designation and associated with U.S. Highway 30 northeast of Walcott Junction, Wyoming. The proposed Project would be seen from a superior view with the top portions of structures and conductors skylined as it crosses through rolling terrain. Disturbance associated with construction access and tower pads would have weak contrast in the landform and vegetation elements of form, line, color, and texture as additional diagonal lines would be produced which would be similar to existing disturbances. The proposed structures would be seen approximately 0.5 mile away and would introduce a moderate/strong contrast with existing structural elements in view due to the parallel viewing angle.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

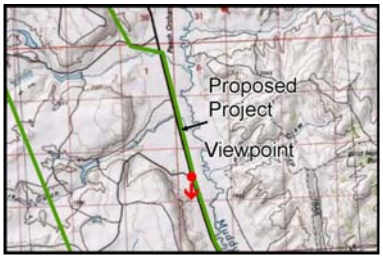
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
225 Outlaw Trail Loop Scenic Dr(WY 789 N of Baggs)

VRM Class/VQO:
III

Location:
Township: 14N
Range: 91W
Section: 18

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, gently rolling, blocky	Large, amorphous patches	Low, cylindrical and thin, vertical
Line	Horizontal, diagonal	Butt (at road) and diffuse edges	Vertical, horizontal
Color	Greenish-gray, tan, grays (road)	Greens, yellow, tans	Dark, dull green, tans, light grays, browns
Texture	Fine grain, smooth	Fine to medium grain	Fine grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rectangular tower pads and access parallel to highway	Cleared rectangular portions for tower pads and access	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Diagonal, horizontal	Creating butt edge at clearings	Diagonal, horizontal; concave (conductors)
Color	Contrasting tans from exposed soil	Low growing reestablished vegetation; greens, yellow, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain and density

---

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

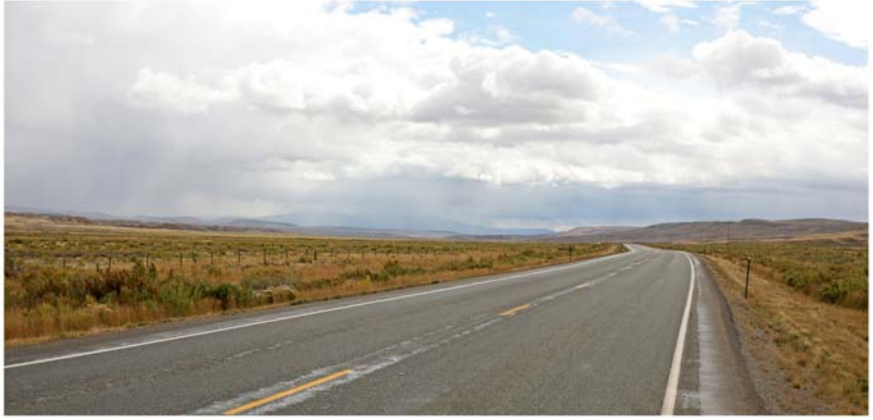
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



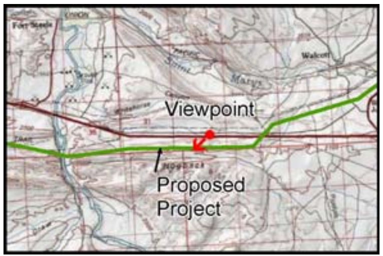
View south on Wyoming Highway 789

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class IV designation and associated with long duration views along Wyoming Highway 789. The proposed Project would be seen from a level view with structures and conductors skylined as it crosses through relatively flat terrain. Disturbance associated with construction access and tower pads would have weak contrast in the landform and vegetation elements of form, line, color, and texture as broken diagonal lines from the disturbance would be intermittently visible. The proposed structures and conductors would be visible directly adjacent to the road and would strongly contrast with existing structural elements of form, line, color, and texture as the structures and conductors would be visible above the horizon for a long duration as they parallel the highway. Please note the proposed Project would traverse an area of VRM Class III approximately 3 miles to the north. Views from Wyoming Highway 789, of the proposed Project traversing this area approximately 0.5 mile away from the highway, would be partially screened by terrain traveling northbound. Due to the short view duration of the potential Project traversing this area, approximately 3 miles on a high-speed travel route and the partial screening, the Project would be compliant with VRM Class III objectives.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/3/2013
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 226 Interstate 80 (east of Sinclair)	Township: 21N Range: 84W	
VRM Class/VQO: III	Section: 32	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low, pyramidal to blocky	Indistinct clumped, some stippled areas	Thin repeating vertical
Line	Irregular, angular, diagonal, layered	Indistinct, diffuse, diagonal	Vertical, horizontal, diagonal
Color	Browns, tans, grays	Dull and dark green, tans	Browns, subtle grays
Texture	Fine to medium grain	Fine to medium grain	Fine grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical; complex, triangular, geometric
Line	n/a	n/a	Diagonal, horizontal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■		■		
	Line				■				■		■		
	Color				■				■		■		
	Texture				■				■		■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

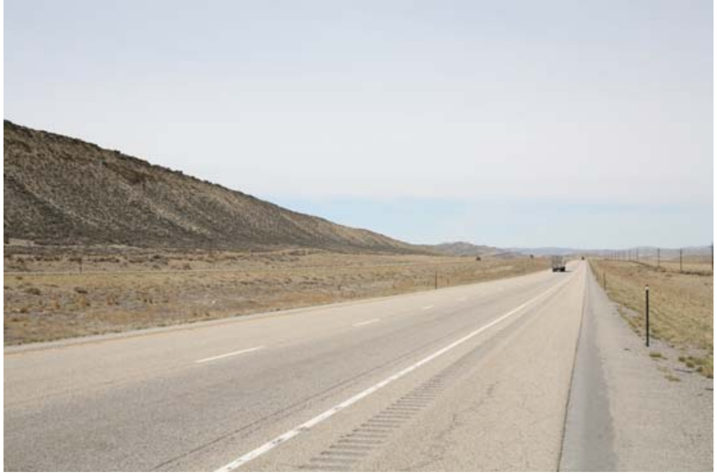
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/3/2013
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from Interstate 80, Wyoming

Weak/moderate to moderate contrast would result form the construction and operation of the proposed Project in a focal landscape setting with VRM Class IV designation and associated with views from Interstate 80. The proposed Project would be located behind the adjacent ridge; therefore, the proposed Project would be mostly screened from view. Disturbance associated with construction access and tower pads as well as any right-of-way vegetation clearing would also be screened by the adjacent ridge. The proposed structures and conductors would be seen at approximately 0.75 mile and introduce moderate contrast as only the top portion of the structures would be visible, skylined over the ridge.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

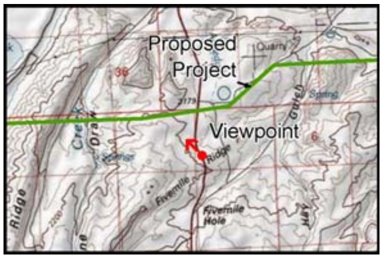
Project Name:
Energy Gateway South
Transmission Project

Key Observation Point
227 Wyoming Highway 71

VRM Class/VQO:
III

Location:
Township: 20N
Range: 88W
Section: 1

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low, undulating	Amorphous patches, curving strip, mottled	n/a
Line	Undulating, horizontal	Curving and diagonal butt edges	n/a
Color	Tans, browns, grays (road)	Variations of greens, golden	n/a
Texture	Fine grain	Fine to medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans, browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

---

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■					■		■			
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■		■			

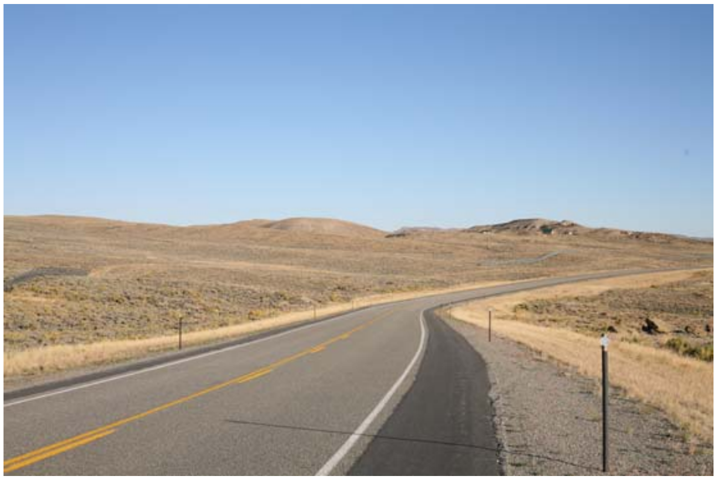
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



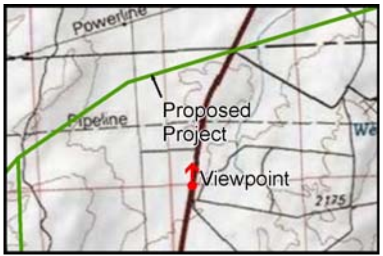
View northwest from Wyoming Highway 71

Moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape associated with Wyoming Highway 71. Disturbance associated with construction access as well as vegetation clearing in the right-of-way would be mostly screened from view but where visible, would introduce curvilinear lines and geometric forms. The proposed structures and conductors would be viewed in a partially skylined condition from approximately 0.5 mile away and would introduce moderate/strong contrast for structure elements of form, line, color, and texture into the landscape. Selective mitigation measure #9 (maximize span length) would be applied at the highway crossing to reduce the dominance of the transmission line structures within the view, however structure contrast would remain moderate/strong as the structures and conductors would still be seen in a partially skylined condition.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 228 Outlaw Trail Loop Scenic Drive(WY HWY 789 S of I-80)	Township: 19N Range: 92W	
VRM Class/VQO: IV	Section: 3	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently rolling	Low, amorphous and geometric patches	Thin vertical
Line	Undulating horizontal, continuous	Diffuse and butt edges	Vertical, weak horizontal
Color	Browns, tans, grays (road)	Greens, tans, browns	Light browns, subtle gays, green
Texture	Fine grain	Fine to medium grain	Fine grain, repeating

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■	■			
	Line				■				■	■			
	Color				■				■		■		
	Texture				■				■		■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

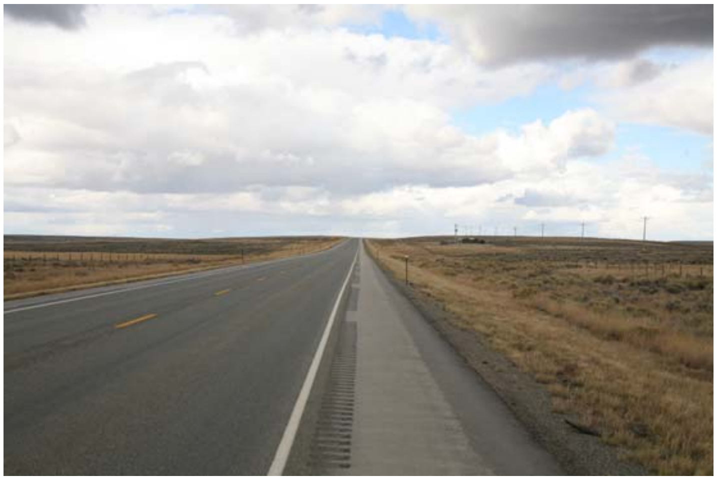
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from Wyoming Highway 789

Moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape with VRM Class IV designation and associated with Wyoming Highway 789. The proposed Project would be seen from a level view with structures and conductors skylined as it crosses through rolling terrain from a inferior viewing position. Earthwork associated with access road and tower pad construction as well as any right-of-way vegetation clearing would not be visible from this viewpoint because of topographic screening. The proposed structures and conductors would be seen along the horizon at 1 mile away and would introduce moderate/strong structure contrast. The span between structures at the crossing of the highway would be maximized (selective mitigation measure #9) to reduce their dominance on views from the highway and therefore, contrast would also be reduced.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name:
Energy Gateway South Transmission Project

Key Observation Point
229 Wamsutter residential

VRM Class/VQO:
III

Location:
Township: 20N
Range: 94W
Section: 34

Location Sketch

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat and level to slightly rolling	Low, amorphous patches and tall pyramidal	Geometric rectangular (home), thin vertical, low vertical and horizontal
Line	Horizontal, continuous	Irregular, diffuse and indistinguishable	Vertical, horizontal, diagonal
Color	Browns, tans, grays	Greens, tans	Browns, whites, reds
Texture	Fine grain	Fine to medium grain	Medium to coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Thin, vertical
Line	n/a	n/a	Thin vertical
Color	n/a	n/a	Dull gray
Texture	n/a	n/a	Uniform repeating medium grain, sparse density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■			■	
	Line				■				■			■	
	Color				■				■			■	
	Texture				■				■			■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

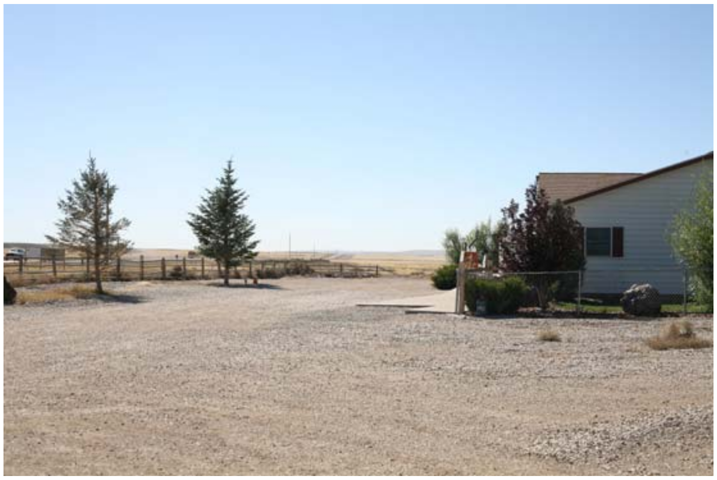
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



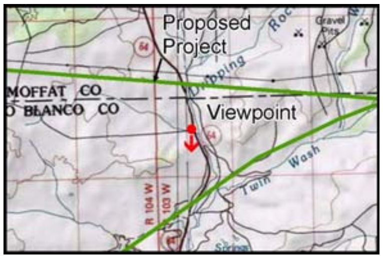
View south from residence along Wamsutter-Crooks Gap Road in Wamsutter, Wyoming

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting with VRM Class III designation and associated with residences in Wamsutter, Wyoming. The proposed Project would be seen from a level view and intermittently screened in nearly flat terrain. Disturbance associated with construction access and tower pads would not be visible from this KOP. The proposed structures and conductors would be visible approximately 3 miles away and would have a weak contrast with existing structural elements as viewed from this location.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 239 Dinosaur Diamond SB (Colorado St HWY 64)	Township: 3N Range: 103W	
VRM Class/VQO: III	Section: 19	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/slightly concave to gently rolling, horizontal, geometric	Low indistinct amorphous and geometric patches	Vertical, rhythmic; geometric/triangular
Line	Continuous, layered horizontal, simple, curving	Indistinct, butt and diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Light gray, tans, light brown	Sage, greens, tans, yellow	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, rhythmic; geometric/triangular
Line	n/a	n/a	Vertical/diagonal, horizontal; concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				■				■		■		
Elements: Line				■				■		■		
Elements: Color				■				■			■	
Elements: Texture				■				■			■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

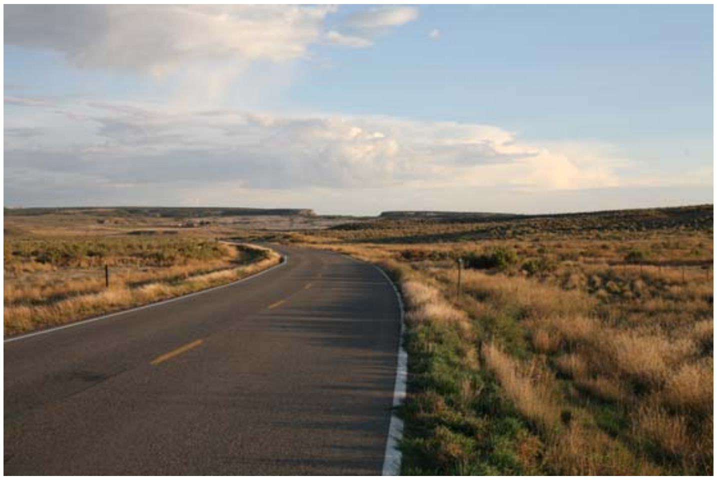
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



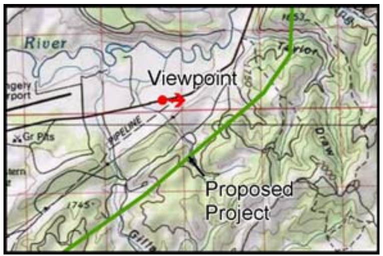
View south from Colorado State Highway 64

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation as viewed from Colorado State Highway 64. The proposed Project would cross through relatively flat terrain in a mostly backdropped condition. Due to topographic screening in the rolling terrain, modifications to the landform and vegetation components of contrast would not be visible from this KOP. The Project structures and conductors would be visible at approximately 0.75 miles and introduce weak/moderate structure contrast. The proposed Project would parallel an existing transmission line, with the existing transmission line located closer to this viewpoint than the Project. Selective mitigation measure #9 (maximize span length) would be applied at the highway crossing to reduce the visual dominance of the transmission line structures being located adjacent to the highway.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 240 Colorado State Highway 64	Township: 2N Range: 101W	
VRM Class/VQO: III	Section: 33	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, pyramidal/blocky with Horizontal/diagonal bands	Amorphous patches, stippled areas	Rectangular, triangular
Line	Horizontal, diagonal	Diffuse and butt edges	Horizontal, diagonal
Color	Brown-tans	Greens, grays, tans yellow	Grays, white, browns
Texture	Fine to coarse grain	Fine to coarse grain	Medium grain, sparse

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric clearings for tower pad and access	Cleared portions for tower pads and access creating geometric	Vertical, rhythmic; geometric/triangular
Line	Diagonal, horizontal	Horizontal and or diagonal butt edges at clearings	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans	Tans and greens of remaining vegetation after clearing for tower	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

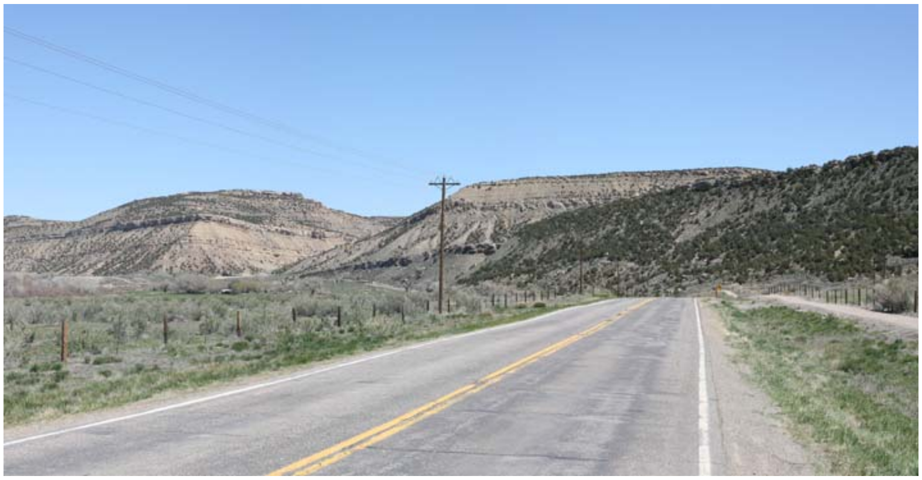
No

Evaluator(s):

Nate Ferguson

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

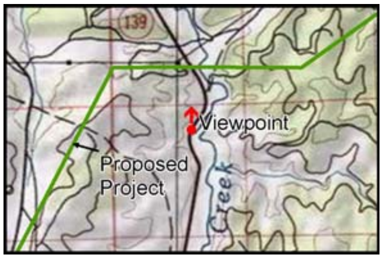


View east from Colorado State Highway 64, east of Rangely Colorado

Moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape associated with Colorado State Highway 64 near Rangely, Colorado. The proposed Project would traverse dissected, sloping terrain in partially screened and skylined conditions. Construction access and tower pad disturbance would weakly contrast with existing landform characteristics since much of the associated disturbance would be screened from viewers along the highway. Weak contrast with existing vegetation patterns would occur where right-of-way clearing through pinyon-juniper vegetation would create geometric forms. Moderate structure contrast would be generated since the proposed Project would be viewed intermittently above the horizon.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 241 Dinosaur Diamond SB in Canyon Pintado NHD	Township: 1N Range: 101W	
VRM Class/VQO: III	Section: 18	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, dissected, ridges and narrow valleys/drainages	Patches and stippled areas	Thin vertical, rectangular
Line	Complex, diagonal	Butt and diffuse edges	Vertical
Color	Tans, grays	Light and dark greens, tans	Browns, grays
Texture	Medium to coarse grain	Medium to coarse grain	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric tower pads and access	Cleared portions for tower pads and access	Bold, vertical; complex geometric/triangular
Line	Diagonal, horizontal	Creating butt edge at clearing	Vertical/diagonal, horizontal; concave (conductors)
Color	Contrasting tans from soil disturbance for clearings	Light and dark greens, tans	Dull gray, transparent
Texture	Medium grain	Medium to coarse grain	Repeating coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form		■				■			■			
Line		■				■			■			
Color		■				■			■			
Texture		■				■			■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

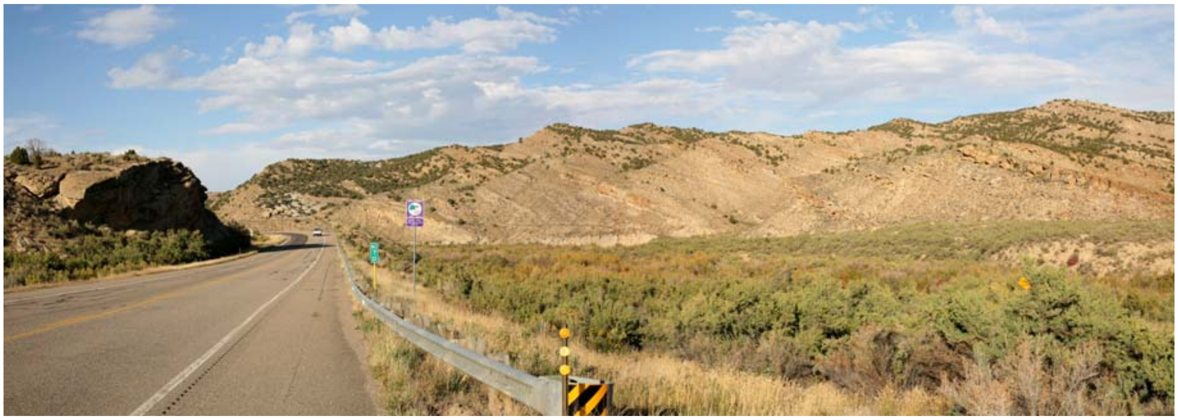
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

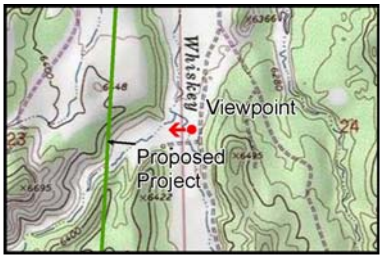


View north from Colorado State Route 139, Dinosaur Diamond Scenic Byway

Strong contrast would result form the construction and operation of the proposed Project in an enclosed landscape setting with VRM Class III designation as viewed from the Dinosaur Diamond Scenic Byway near Rangely, Colorado. The proposed Project would cross rugged terrain in a skylined condition. Modifications to landform associated with construction access and tower pad earthwork would introduce moderate contrast to landform elements of form, line, color, and texture as thin contrasting diagonal lines would be introduced. Similarly, moderate contrast of vegetation elements of form, line, color, and texture would occur where geometric clearings produced by right-of-way clearing through pinyon-juniper would be visible. The proposed structures and conductors would be visible from 0.5 mile in a skylined condition which would introduce strong structure contrast. To reduce contrast, selective mitigation measures #3 (minimize earthwork), #4 (minimize vegetation clearing), and #9 (maximize span length) would be applied to decrease contrast to the extent practicable. To further reduce contrast, the proposed Project could be located closer to the existing 138kV transmission line which would mostly screen views of the proposed Project from this location.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 4S	Location Sketch
Key Observation Point # 242 Whiskey Creek residential	Range: 104W	
VRM Class/VQO: III	Section: 24	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, blocky, dissected, ridges and narrow valleys/drainages	Patches/clumped and stippled areas	n/a
Line	Complex, diagonal, horizontal	Diffuse edges	n/a
Color	Tans, grays, reds	Light and dark greens, tans, yellow	n/a
Texture	Medium to coarse grain	Coarse grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric clearings for tower pads and access	Low geometric patches of reestablished vegetation	Bold, vertical; complex geometric/triangular
Line	Horizontal, diagonal	Horizontal and diagonal butt and diffuse edges created at clearings	Vertical/diagonal; thin concave (conductors)
Color	Tans, reds	Tans, green	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■					■		■			
	Line		■					■		■			
	Color		■					■		■			
	Texture		■					■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

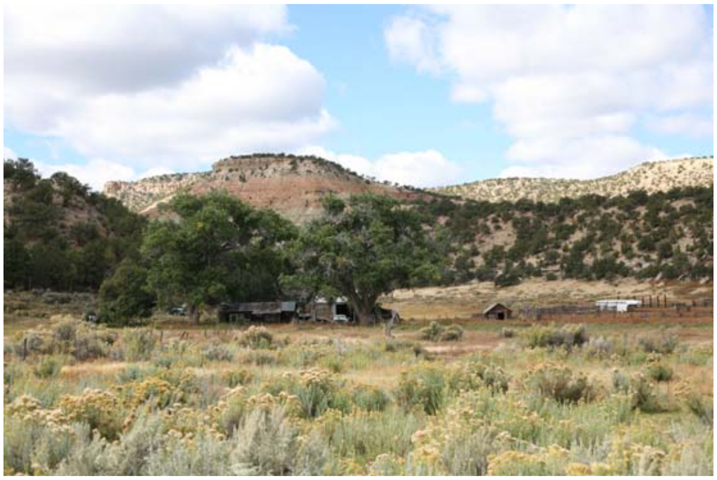
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

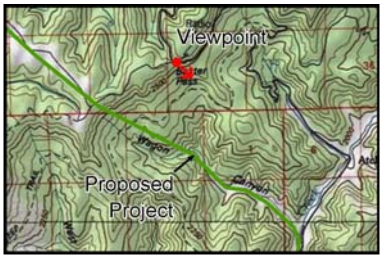


View west from Whiskey Creek Road, Colorado

Moderate to moderate/strong contrast would result from the construction and operation of the proposed Project within a partially enclosed landscape designated as VRM Class III and viewed from a residence in Whiskey Canyon. The proposed Project crosses moderately steep terrain and would be skylined as it crosses along the top of the ridge. Disturbance associated with construction access would introduce curvilinear lines and geometric forms that would be incongruent with existing landscape patterns. Due to the scattered vegetation within the right-of-way, contrast produced by vegetation clearing in the right-of-way would be weak. The proposed structures would be seen 0.3 mile away from an inferior viewing position. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 243 Baxter Pass Road	Township: 5S Range: 103W Section: 34	
VRM Class/VQO: IV		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, dissected, ridges and narrow valleys/drainages	Patches and stippled areas	n/a
Line	Complex, diagonal	Butt and diffuse edges	n/a
Color	Tans, grays	Light and dark greens, tans	n/a
Texture	Medium to coarse grain	Medium to coarse grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, geometric	Diagonal, butt edge	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans, grays	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨			▨		
	Line			▨			▨				▨		
	Color		▨					▨				▨	
	Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

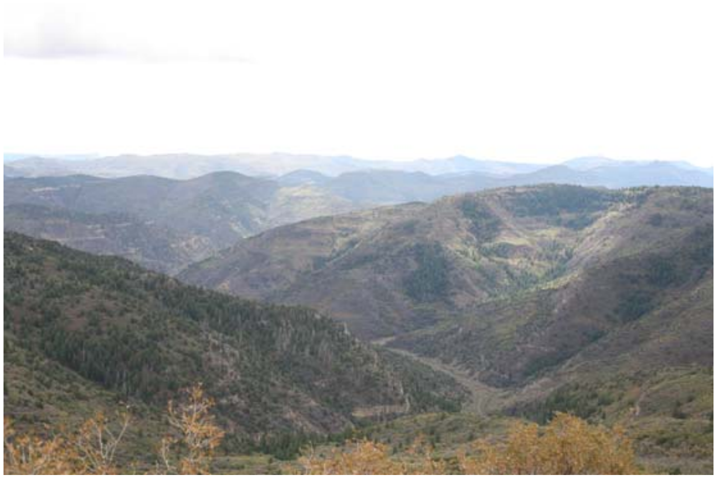
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



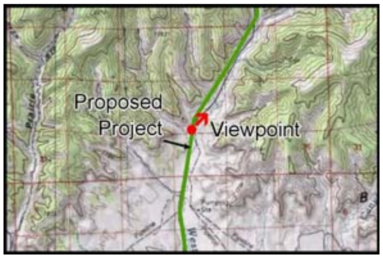
View southeast from Baxter Pass, Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated by the BLM as VRM Class IV viewed from Baxter Pass. The proposed Project traverses moderately steep to level terrain as it follows the drainage located below the viewpoint. Due to the superior viewer position, disturbance associated with construction road access would be visible and introduce curvilinear lines and geometric forms into the landscape. Vegetation clearing within the right-of-way would also introduce geometric forms, which would be incongruent with existing vegetation patterns. The proposed structures would be seen 1.2 miles away backdropped by the adjacent steep terrain.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 244 Garfield County Road 201 (south of Baxter Pass)	Township: 7S Range: 104W	
VRM Class/VQO: III	Section: 34	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, dissected, ridges and narrow valleys/drainages	Patches and stippled areas	n/a
Line	Complex, diagonal	Butt and diffuse edges	n/a
Color	Tans, grays	Light and dark greens, tans	n/a
Texture	Medium to coarse grain	Medium to coarse grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads), stippled vegetation	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Indistinct, regular, diffuse edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Light tans, browns, reds	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form	■						■		■			
Line		■					■		■			
Color		■					■		■			
Texture		■					■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

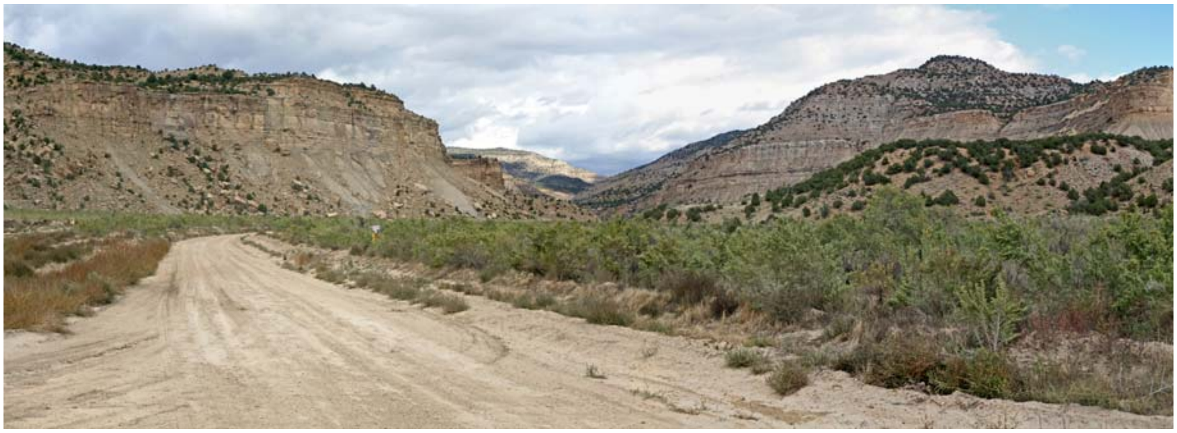
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



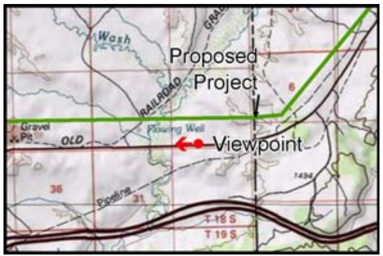
View northeast from Garfield County Road 201, Colorado

Moderate/strong to strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting with a VRM Class III designation along Garfield County Road 201. The proposed Project would cross steep terrain and would require construction access roads to be built on the sides of the canyon producing large areas of earthwork. Vegetation clearing in the right-of-way would mostly be screened by adjacent vegetation but where visible, would introduce geometric forms into the landscape. The proposed structures would be located directly adjacent to the road and due to this proximity, structures may be skylined. Through the application of selective mitigation measure #7, which would relocate the project into the valley floor, contrast generated by constructing access roads on steep terrain would be reduced. To further reduce contrast on views from this road, selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 18S	Location Sketch
Key Observation Point # 245 Old U.S. Highway 6 (west of Mack)	Range: 26E	
VRM Class/VQO: III	Section: 29	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow slopes, rugged in areas	Indistinct, stippled, band along riparian corridor, geometric clearing	n/a
Line	Horizontal, broken diagonal	Indistinct, diffuse edges, butt edge adjacent to road	n/a
Color	Tans	gray-greens, tans	n/a
Texture	Fine to medium grain	Medium grain, uneven/random	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular in riparian corridor	Vertical, rhythmic and diminishing; geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge through riparian corridor	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■		■			
Elements: Line			■				■		■			
Elements: Color			■				■			■		
Elements: Texture			■				■			■		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

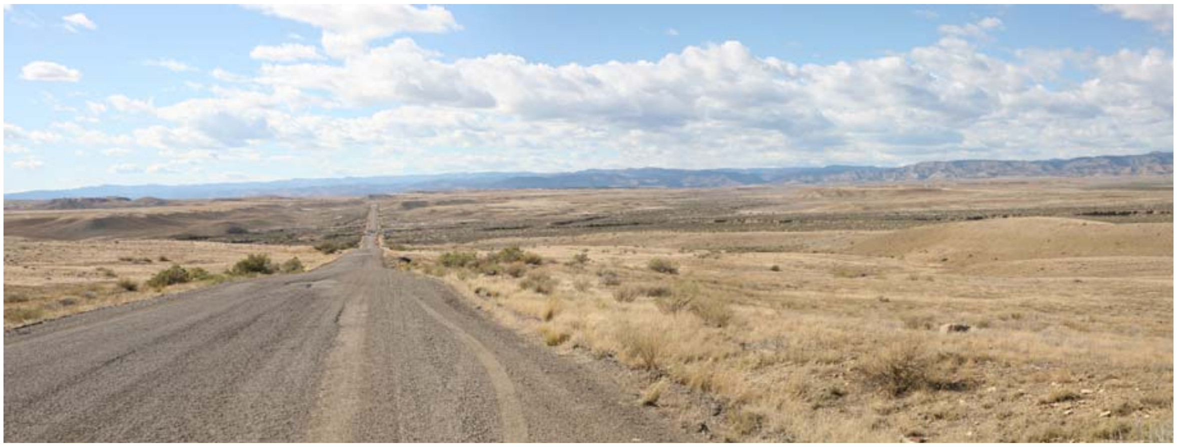
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View west on Old U.S. Highway 6, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting with VRM Class III designation and associated with long duration views from Old US Highway 6. The project would be viewed in a backdropped condition from a level to superior position as it traverses through gently sloped terrain. Disturbance associated with construction access and tower pads would have weak contrast with landform and vegetation due to the rolling terrain and low-growing vegetation. The proposed structures and conductors would be visible at approximately 0.5 mile and would produce a moderate/strong contrast with structural elements in this natural landscape setting.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 246 Interstate 70 (east of Thompson Springs)

VRM Class/VQO:
III

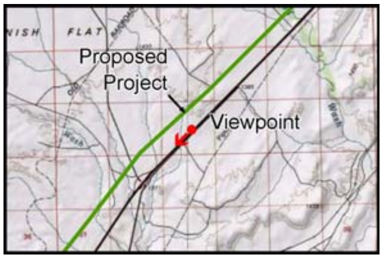
Location:

Township: 20S

Range: 24E

Section: 21

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, level	Short, patchy	Vertical, thin
Line	Horizontal, continuous	Angular, broken, diffuse edges	Vertical, concave
Color	Tans, grays	Gray-greens, tans, browns, dull	Brown
Texture	Fine grain	Even, fine grain	Coarse grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain and density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨		▨			
	Line			▨				▨		▨			
	Color			▨				▨		▨			
	Texture			▨				▨		▨			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

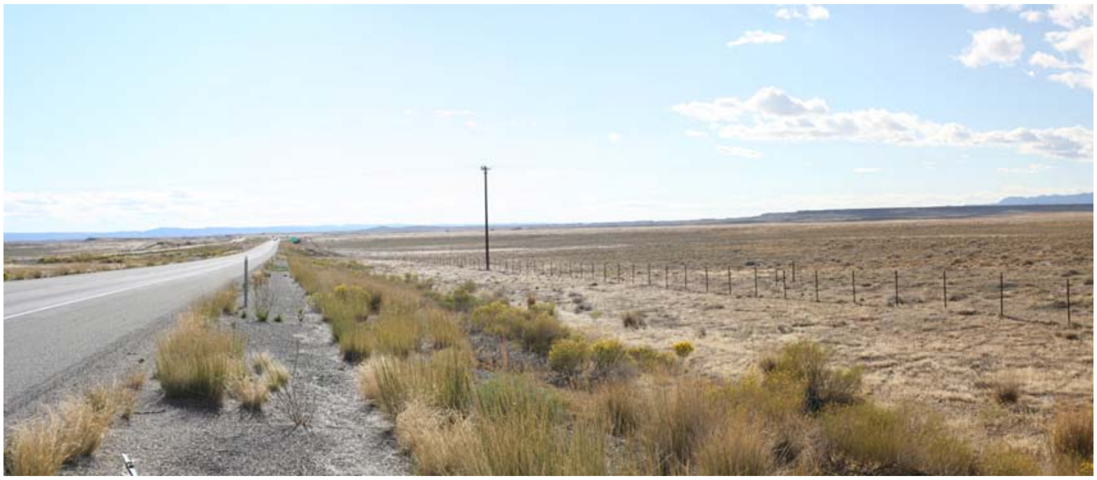
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



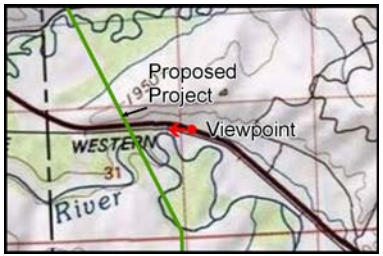
View southwest from Interstate 70, Utah

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation and associated with viewers traveling along I-70. Motorists would have long duration views of the proposed Project as it parallels the interstate through flat terrain in a skylined condition. Disturbance associated with construction access and tower pads would weakly contrast with existing landform and vegetation elements of form, line, color, and texture due to the flat terrain and low-growing vegetation. The proposed structures and conductors would be visible at approximately a 0.5 mile and would have strong contrast with structure elements of form, line, color, and texture.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 7N	Location Sketch
Key Observation Point # 251 U.S. Highway 40 (east of Craig)	Range: 89W	
VRM Class/VQO: n/a	Section: 32	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Blocky to flat	Sparse and stippled to large clumps and low geometric patches	Low geometric/rectangular
Line	Curving, continuous, diagonal, horizontal	Diffuse to straight and curving butt edge	Weak horizontal and vertical
Color	Tans, beige, grays (railroad and road)	Variations of green, yellow, tan, reds	Grays, tan
Texture	Fine to medium grain	Fine to coarse, dense	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric clearing for tower pad	Geometric patch at clearing of reestablished low vegetation	Vertical; complex, triangular, geometric
Line	Horizontal	Horizontal	Diagonal, horizontal; thin concave (conductors)
Color	Tan	Green, tan	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■					■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

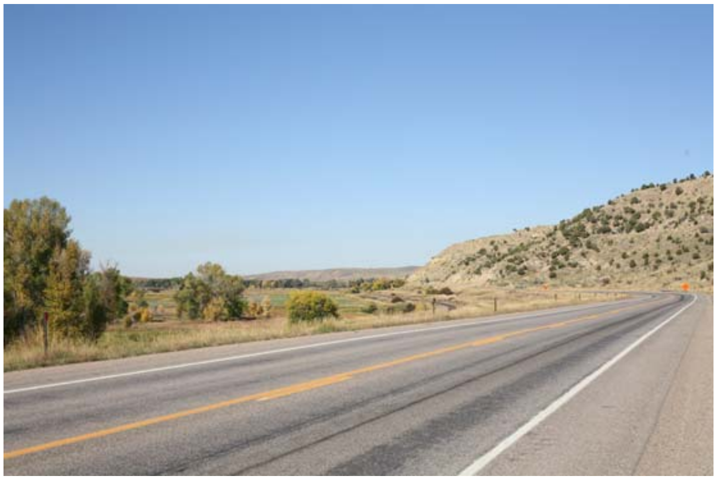
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



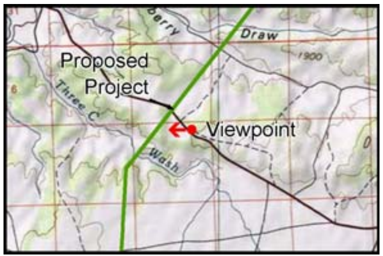
View west from U.S. Highway 40, Colorado

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic/feature landscape setting associated with U.S. Highway 40 and the Yampa River Valley, east of Craig, Colorado. The proposed Project would be seen from an inferior position with the structures and conductors skylined as the proposed Project crosses over a ridge and continues down into the valley. Disturbance associated with construction access and tower pads would have weak/moderate contrast with existing landform characteristics. Contrast with existing vegetation elements of form, line, color, and texture would be weak. The proposed structures and conductors would be visible at approximately a 0.5 mile and would have strong contrast with structure elements of form, line, color, and texture as structures and conductors would be seen in a prominent, skylined position. To reduce contrast, selective mitigation measure #3 (minimize ground disturbance) would be applied to limit earthwork efforts on the ridge to the extent practicable.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 7N	Location Sketch
Key Observation Point # 252 Colorado State Highway 318 (west of Maybell)	Range: 97W	
VRM Class/VQO: III	Section: 4	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, moderate to steep slopes	Amorphous patches and stippled areas	n/a
Line	Undulating horizontal	Indistinct to weak diffuse edges	n/a
Color	Tans, beige	Dark to light greens, tans	n/a
Texture	Fine to medium grain	Medium to coarse	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric clearings for tower pad and access	Cleared portions for tower pads and access creating geometric	Vertical; complex, triangular, geometric
Line	Diagonal, horizontal	Horizontal and or diagonal butt edges at clearings	Diagonal, horizontal; thin concave (conductors)
Color	Tans	Tans and greens of remaining vegetation after clearing for tower	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

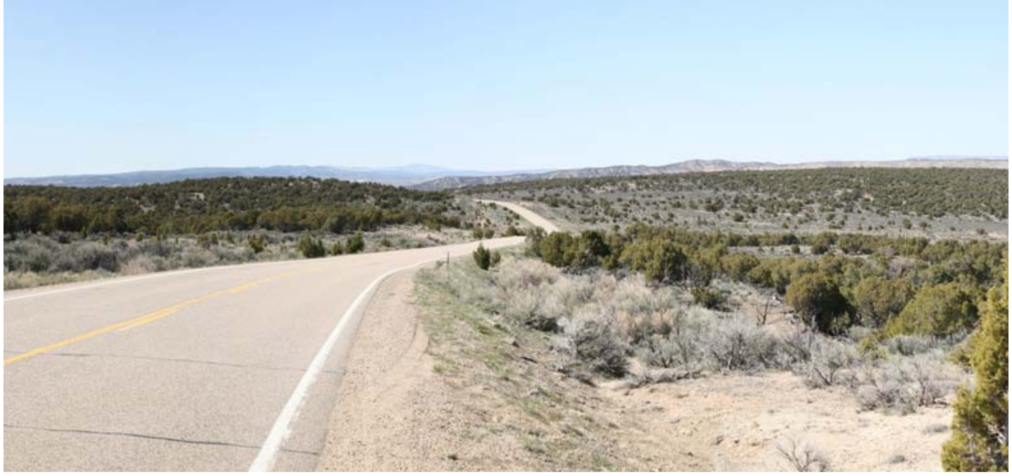
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View west from Colorado State Highway 318

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape associated with Colorado State Highway 318. The proposed Project would cross rolling terrain in partially screened and backdropped conditions from a slightly superior view. Construction access and tower pad earthwork would introduce weak contrast to landform and vegetation. The proposed structures and conductors would cross the road perpendicular approximately 0.3 mile and would introduce moderate structure contrast into the landscape for structure elements of form, line, color and texture into this natural landscape setting.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

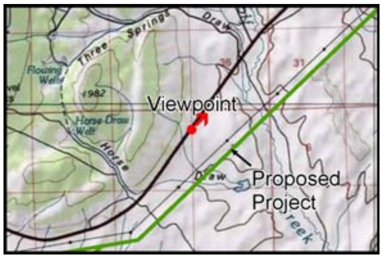
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
254 U.S. Highway 40 (east of Dinosaur)

VRM Class/VQO:
III

Location:
Township: 3N
Range: 100W
Section: 2

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling, low relief, concave	Amorphous patches, stippled in areas, complex	Vertical, rhythmic; complex geometric/triangular
Line	Undulating and layered horizontal, curving, straight	Irregular, diffuse and butt edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, grays, red-brown	Greens, yellow, tan, sage	Dull gray, transparent
Texture	Fine to medium grain	Fine to medium grain	Repeating medium grain and density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Thin continuous diagonal and geometric clearings for tower pads	Thin continuous strip of low reestablished vegetation at clearing	Vertical, rhythmic and diminishing; geometric/triangular
Line	Diagonal	Diagonal butt edge created at clearing	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans	Tans, greens	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing medium grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■			■		
Elements: Line			■				■				■	
Elements: Color			■				■				■	
Elements: Texture			■				■				■	

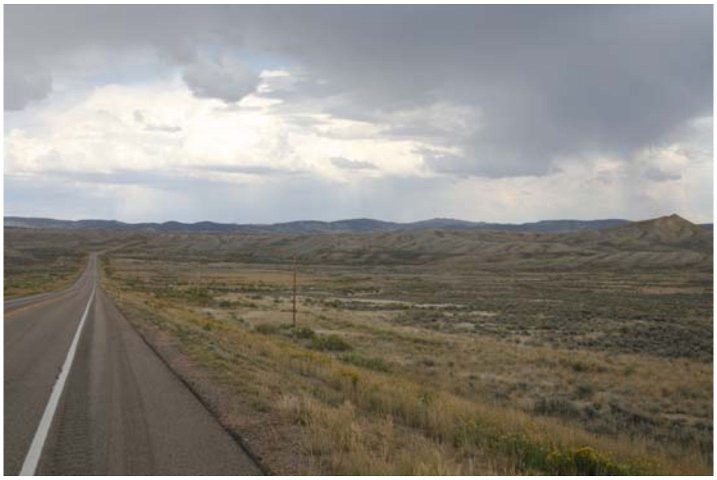
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



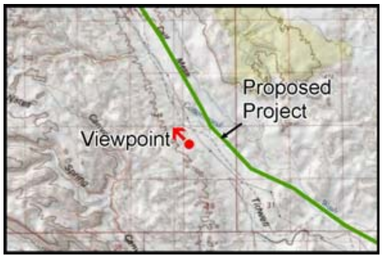
View northeast from U.S. Highway 40, Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation and associated with U.S. Highway 40 east of Massadona, Colorado. The proposed Project would be seen from a level view with the majority of the structures backdropped as it crosses through rolling terrain. Disturbance associated with construction access and tower pads would have weak contrast in the landform and vegetation elements of form, line, color, and texture as broken diagonal lines from the disturbance would be visible through the rolling terrain. The proposed structures and conductors would be visible at 1 mile, which would have a weak/moderate contrast with existing structural elements visible in this landscape including two existing transmission lines. The existing transmission lines are located approximately 250 feet closer to this viewpoint than the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/12/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 20S	Location Sketch
Key Observation Point # 255 Mexican Mountain WSA	Range: 13E	
VRM Class/VQO: III	Section: 25	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, complex, rolling	Indistinct, patches, stippled	Vertical, geometric
Line	Horizontal, diagonal, angular, undulating	Indistinct	Vertical/diagonal, horizontal; concave (conductors)
Color	Reds, browns, tans, whites	Dark greens, tans	Browns
Texture	Fine to medium grain, striated	Medium grain, uneven random	Repeating medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, reds, lighter colored soils	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		▨					▨			▨		
	Line			▨				▨				▨	
	Color		▨					▨			▨		
	Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

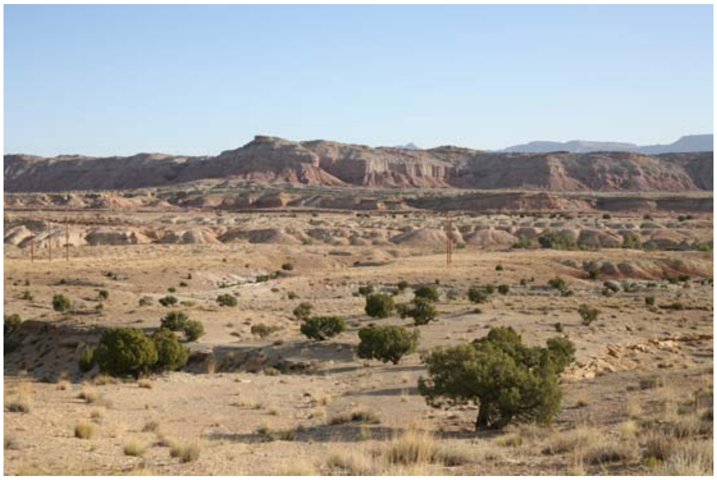
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/12/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from boundary of Mexican Mountain Wilderness Study Area, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated by the BLM as VRM Class III viewed from the Mexican Mountain Wilderness Study Area. The proposed Project traverses rolling terrain and would be backdropped by the adjacent landforms. Disturbance associated with construction access would be partially screened by terrain but where visible, would introduce a weak/moderate contrast with existing landforms due to the curvilinear forms generated by road construction. Due to the sparse, low-growing vegetation present in this landscape, there would be a weak contrast with existing vegetation patterns. The proposed structures would be seen at approximately 0.5 mile viewed beyond an existing transmission line and would introduce weak/moderate structure contrast. To reduce contrast, selective mitigation measure #3 (minimize ground disturbance) would be applied to limit the visual influence of construction access roads.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

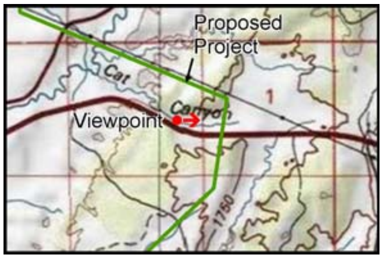
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
256 Dinosaur Diamond SB (US 6 E of Wellington)

VRM Class/VQO:
III

Location:
Township: 15S
Range: 11E
Section: 2

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Terraced, rolling, level	Amorphous patches and stippled areas	Moderately tall, vertical, geometric, screened
Line	Bold, horizontal, diagonal	Diffuse edges	Angular, concave, horizontal
Color	Light tans, browns	Variety of greens, tans	Brown
Texture	Fine to medium grain	Fine to medium grain	Fine grain, sparse density, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Light tans, browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■		■			
Line		■					■		■			
Color			■				■		■			
Texture			■				■			■		

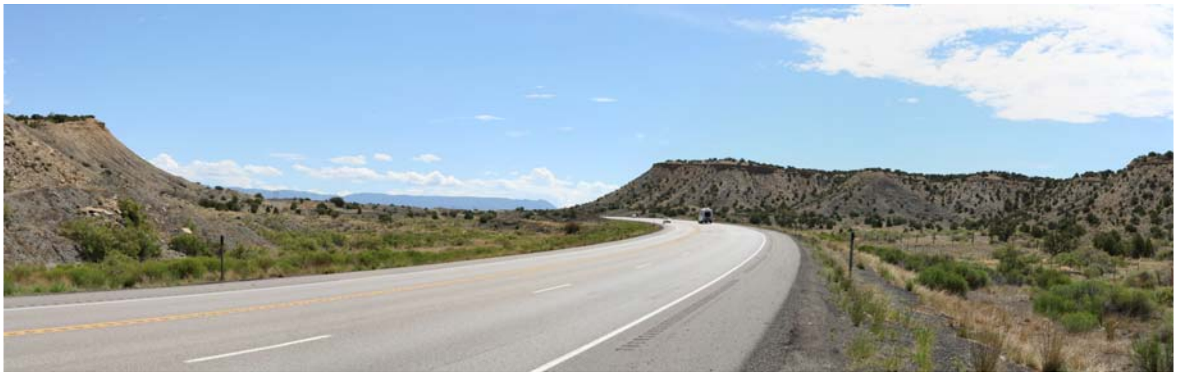
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



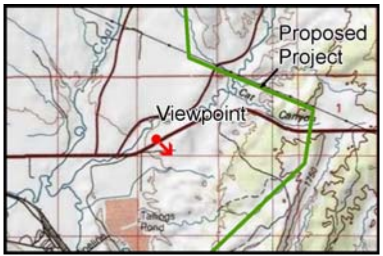
View east from Dinosaur Diamond Scenic Byway (U.S. Highway 6), Utah

Moderate contrast would result from the construction and operation of the proposed Project, within an enclosed landscape setting designated as VRM Class III and viewed from U.S. Highway 6. Disturbance associated with construction access would introduce a weak/moderate landscape contrast as roads would likely be constructed down the slope of the plateau. Weak contrast with existing vegetative patterns is anticipated after right-of-way vegetation clearing due to the low-growing, scattered vegetation which would be minimally modified. The proposed structures would be visible at approximately 0.5 mile and would introduce strong contrast as views of the existing 138kV are mostly screened by topography. Selective mitigation measure #9 (maximize span length) would reduce contrast in this area by limiting the number of proposed structures visible from this viewpoint and bring the proposed Project into compliance with VRM Class III.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 15S	Location Sketch
Key Observation Point # 257 Dispersed residences east of Wellington	Range: 11E	
VRM Class/VQO: III	Section: 3	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Flat, horizontal MG: Simple, rolling, level	FG: Low amorphous to geometric patches	Low, geometric
Line	FG: Weak, horizontal MG: Simple, bold, horizontal,	FG: Regular, horizontal, straight MG: Diffuse edges	Horizontal and vertical
Color	FG: Browns (not visible) MG: Light tans, browns	FG: Greens to tans (seasonal) MG: Greens, tans	Tan
Texture	FG: Fine grain, matte MG: Fine to medium grain	FG: Fine to medium grain MG: Medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, rhythmic and diminishing; geometric/triangular
Line	n/a	n/a	Vertical/diagonal, horizontal; weak concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Repeating/diminishing medium grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				▨				▨		▨		
Line				▨				▨		▨		
Color				▨				▨		▨		
Texture				▨				▨		▨		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

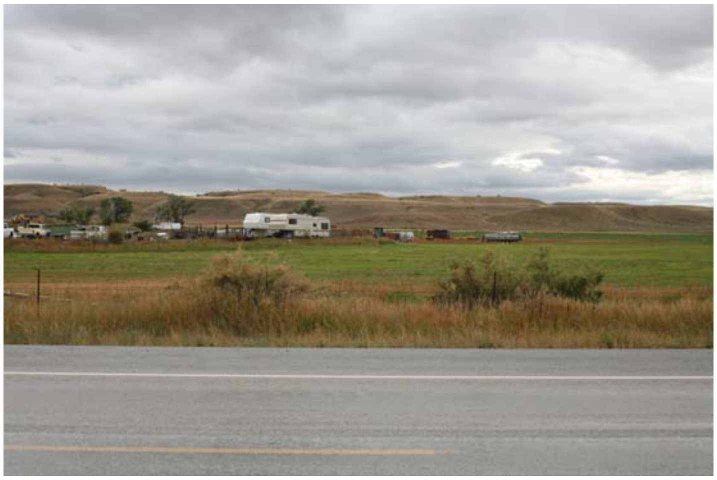
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast from residences east of Wellington along U.S. Highway 6, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III and viewed from residences along U.S. Highway 6. The proposed Project crosses rolling terrain and the structures would be skylined along the distant ridge. Disturbance associated with construction access and right-of-way clearing would be screened by topography, therefore these disturbances would not be visible from the KOP. The proposed structures would be seen approximately 1.5 miles away partially skylined.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

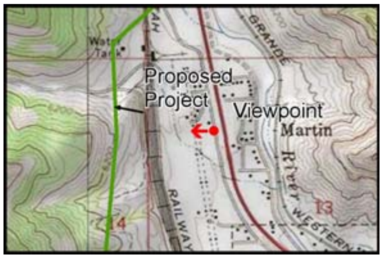
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
258 Martin residential

VRM Class/VQO:
III

Location:
Township: 13S
Range: 9E
Section: 13

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Undulating, horizontal, bold vertical, rugged	Few, stippled, amorphous patches	Vertical, geometric
Line	Curving, vertical, diagonal, angular	Weak diffuse, indistinct, broken	Vertical, concave, horizontal
Color	Tans, browns, grays	Dark greens, tans, gray-greens	Brown, gray
Texture	Banded, course grain	Fine to medium grain, uneven/random	Medium grain, dense

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Stippled vegetation	Bold, vertical; complex geometric/triangular
Line	Geometric, curvilinear	Diffuse edge	Vertical/diagonal; thin concave (conductors)
Color	Tans, browns, grays	Tans, gray-greens	Dull gray, transparent
Texture	Fine textured	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		▨					▨			▨		
Elements: Line		▨					▨			▨		
Elements: Color			▨				▨			▨		
Elements: Texture		▨					▨				▨	

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

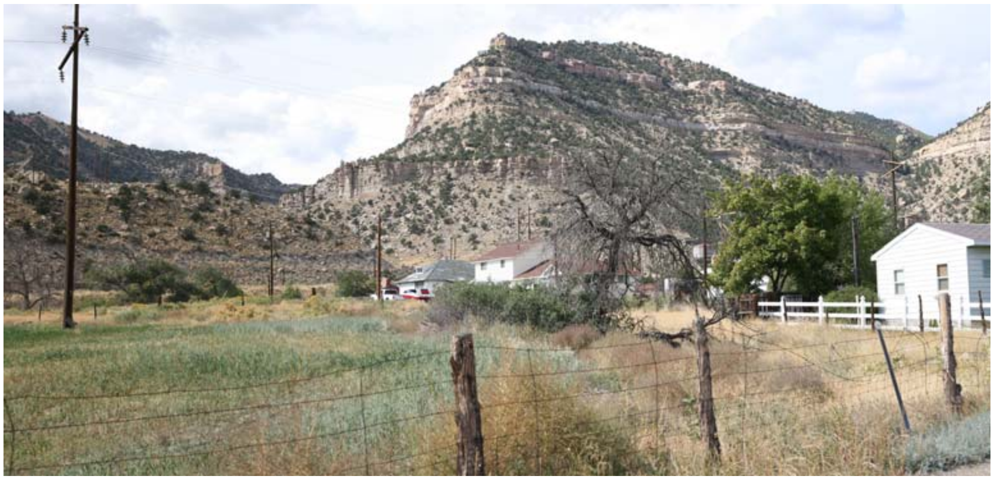
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/3/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



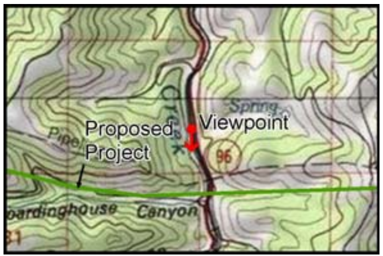
View west from residences in Martin, Utah

Moderate contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting as viewed from residences in Martin, Utah toward land designated as VRM Class III. The proposed Project would cross moderately steep terrain and would be backdropped by adjacent terrain as viewed from an inferior position. Disturbance associated with the construction of access roads as well as clearing of vegetation within the right-of-way would introduce additional geometric forms into the landscape. The proposed structures would be seen at approximately 0.25 mile in context with an existing 138kV transmission line. The proposed structures would introduce moderate structure contrast and these structures would begin to dominate the landscape character due to the relative scale of the proposed Project. To reduce contrast associated with the construction of access roads and tower pads, selective mitigation measure #3 (minimize ground disturbance) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 13S	Location Sketch
Key Observation Point # 259 Energy Loop Scenic Byway (Utah State Route 96)	Range: 7E	
VRM Class/VQO: n/a	Section: 29	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded	Vertical, complex, pyramidal, amorphous	Vertical, thin
Line	Curving, angular, continuous	Flowing, complex, irregular, butt edge	Vertical, angular
Color	Tans	Vivid, greens, tans, seasonal variation	Browns
Texture	Medium to coarse grain	Coarse, stippled, scattered	Fine grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				■				■	■			
Line				■				■		■		
Color				■				■	■			
Texture				■				■		■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

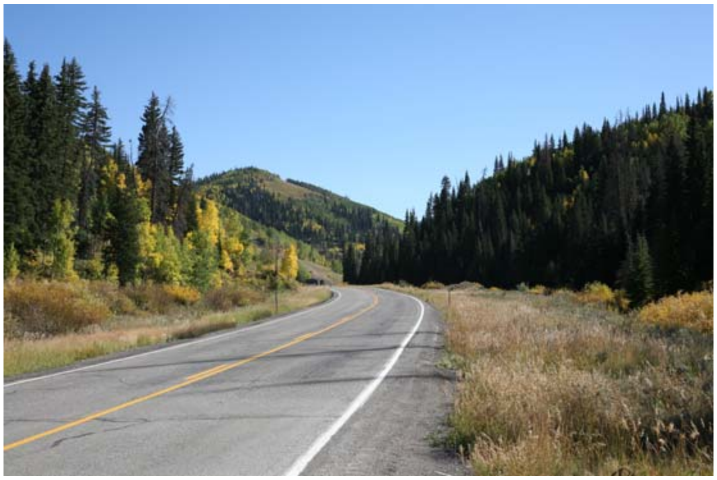
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



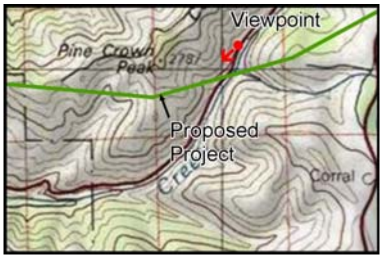
View south from Energy Loop Scenic Byway (Utah State Route 96), Utah

Moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from the Energy Loop Scenic Byway. The proposed Project would cross steep terrain and would be partially backdropped by adjacent terrain. Construction access roads and right-of-way vegetation clearing would be screened by existing vegetation and topography from this KOP. The proposed structures would be located approximately 0.5 mile away with most of the structures screened by topography and vegetation, but where visible, these structures would introduce a moderate/strong structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 13S	Location Sketch
Key Observation Point # 260 Energy Loop Scenic Byway (Utah State Route 31)	Range: 5E	
VRM Class/VQO: Partial Retention	Section: 27	



Characteristic Landscape Description

	Landform/Water	**Vegetation**	**Structures**
Form	Diagonal, bold, rounded	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous	Flowing, complex, irregular	n/a
Color	Tans	Vivid, variety of greens, white, tans, seasonal variation	n/a
Texture	Medium to coarse grain	Dense, stippled	n/a

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures**
Form	Level, horizontal	Geometric, rectangular	Bold, vertical, rhythmic; complex geometric/triangular
Line	Curvilinear, geometric	Angular, bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form	■				■				■			
Line	■				■				■			
Color		■				■			■			
Texture		■				■			■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

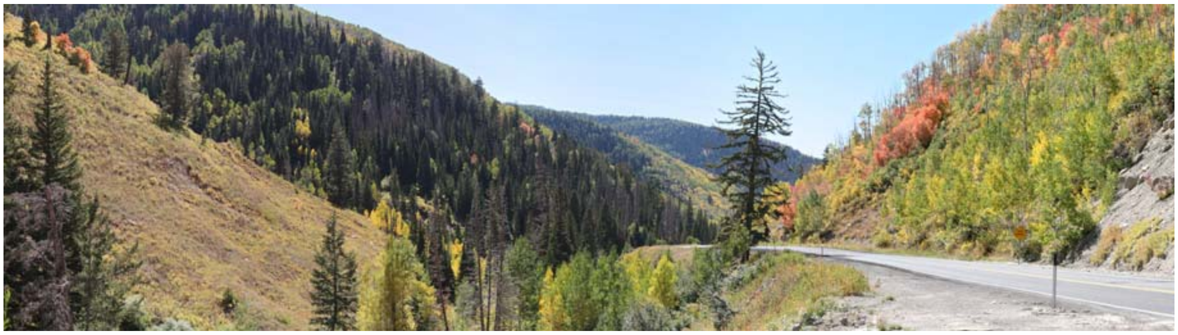
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from Energy Loop Scenic Byway (Utah State Route 31), Utah

Strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated by the Manti-La Sal National Forest as a partial retention VQO. The proposed Project would cross steep terrain and would be partially backdropped by the canyon walls. Construction access along the steep canyon slopes would generate a moderate/strong contrast with the existing landforms. The geometric form created by right-of-way vegetation clearing would produce a moderate/strong contrast with existing vegetation patterns. The proposed structures would be seen at approximately 0.3 mile away and introduce a strong structure contrast into the landscape. Selective mitigation measures #3 (minimize ground disturbance), #4 (minimize vegetation clearing), and #9 (maximize span length) would be applied to reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

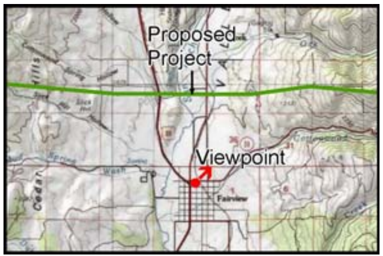
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 261 Fairview residential

VRM Class/VQO:
n/a

Location:
Township: 14S
Range: 4E
Section: 2

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Level, undulating, rolling	Vertical, amorphous patches, stippled areas	Low, geometric
Line	Diagonal, curving	Flowing, complex, diffuse and butt edges	Diagonal, horizontal
Color	Tans, whites	Greens, tans, seasonal variation	Browns, grays
Texture	Medium to fine grain	Medium grain	Medium grain, dense

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Thin, vertical
Line	Geometric, curvilinear	Angular, butt edge	Thin, vertical; thin/weak concave (conductors)
Color	Tans, whites	Tans, gray-green	Dull gray
Texture	Fine grain	Fine to medium grain	Uniform repeating medium grain, sparse density

Degree of Contrast

	Features												
	Landform/ Water Body				Vegetation				Structures				
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■			■					■		
Elements	Line		■			■						■	
Elements	Color			■			■				■		
Elements	Texture		■				■					■	

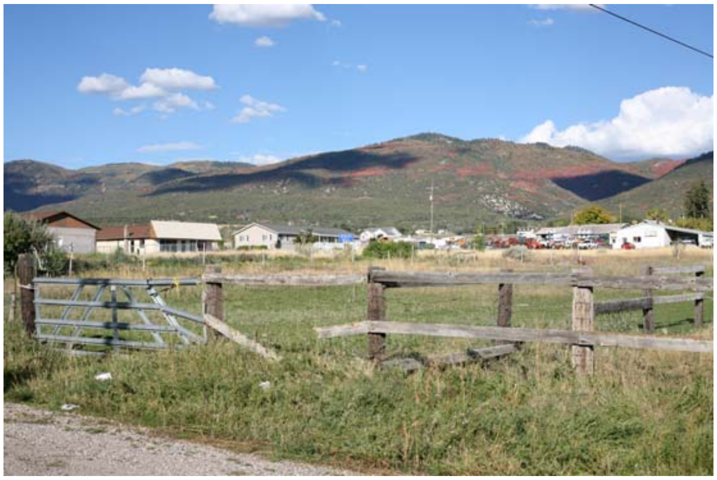
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



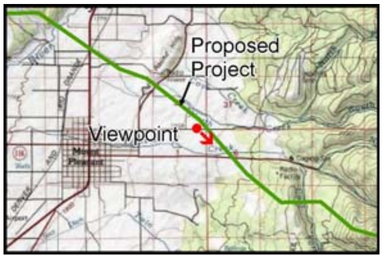
View northeast from 100 East adjacent to residences in Fairview, Utah

Moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from Fairview, Utah. The proposed Project crosses steep terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access and vegetation clearing in the right-of-way would be visible across the side of the mountain. These disturbances would introduce moderate to moderate/strong landscape contrast as a result of the geometric forms created by these activities. The proposed structures would be viewed from an inferior viewing position approximately 2 miles away which would introduce a weak/moderate structure contrast because of the distance between the proposed Project and this viewpoint. Selective mitigation measures #3 (minimize ground disturbance) and 4 (minimize vegetation clearing) would reduce landscape contrast generated by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 262 Dispersed residences east of Mount Pleasant	Township: 15S Range: 4E	
VRM Class/VQO: n/a	Section: 1	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Flat/slightly concave to gently rolling	FG: Low indistinct patches, stippled areas	Vertical, geometric
Line	FG: Continuous, horizontal, simple BG: Diagonal, undulating	FG: Indistinct, weak diffuse edges BG: Butt edges, complex	Vertical/diagonal, horizontal; concave (conductors)
Color	FG: Tans (not visible) BG: Tans (not visible) and grays	FG: Sage greens, tans BG: Light and dark greens, seasonal	Brown
Texture	FG: Fine grain BG: Moderate to coarse grain	FG: Fine to medium grain BG: Moderate to coarse grain	Fine grain, medium density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical, rhythmic; complex geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		▨				▨			▨			
	Line		▨				▨				▨		
	Color		▨				▨				▨		
	Texture		▨				▨				▨		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

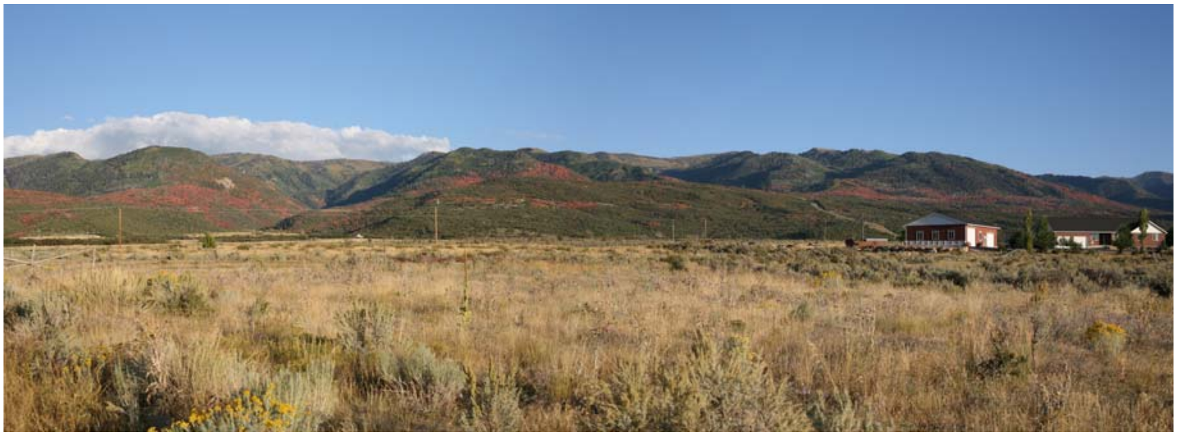
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



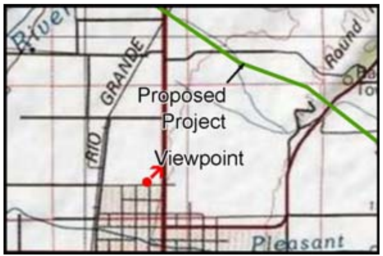
View southeast from residence east of Mount Pleasant, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from residences east of Mount Pleasant. The proposed Project crosses flat to moderately steep terrain and would be backdropped by adjacent terrain. Disturbances associated with construction access roads and tower pads would introduce geometric forms incongruent with the existing landscape character. Right-of-way vegetation clearing would create a bold, geometric form that would be similar to the cleared right-of-way for the existing 345kV transmission line. The proposed structures would be seen on the Wasatch Plateau 1.7 miles away but would be seen at approximately 0.25 mile in the adjacent valley landscape from a level to an inferior viewing position in context with an existing 345kV transmission line. Selective mitigation measures #3 (minimize cut and fill) and #4 (minimize tree clearing) would reduce contrast produced by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 263 Mount Pleasant residential	Township: 14S Range: 4E	
VRM Class/VQO: n/a	Section: 34	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Level to slightly rolling, prominent Wasatch Plateau in the background	Low grassland, moderately tall trees	Rectangular, geometric
Line	Horizontal	Vertical, smooth	Angular, horizontal
Color	Tans	Greens, tans	Gray, white, red, brown
Texture	Smooth	Fine to medium grain	Medium to coarse grain, dense

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, rhythmic; geometric/triangular
Line	n/a	n/a	Vertical/diagonal, horizontal; weak concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Repeating medium grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■		■		
	Line				■				■			■	
	Color				■				■			■	
	Texture				■				■			■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

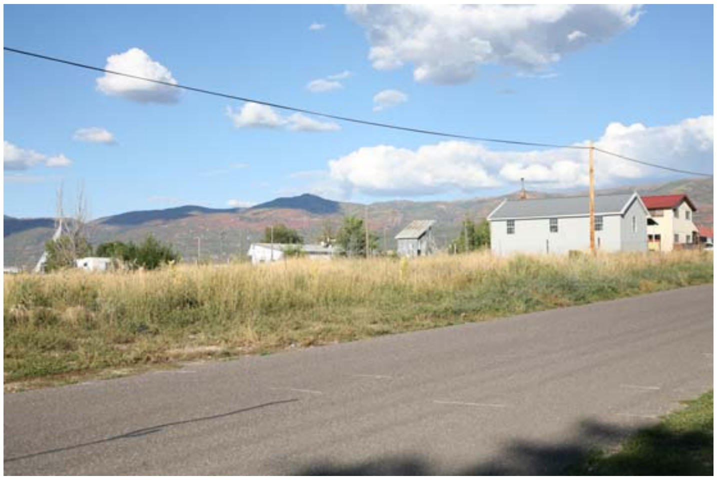
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



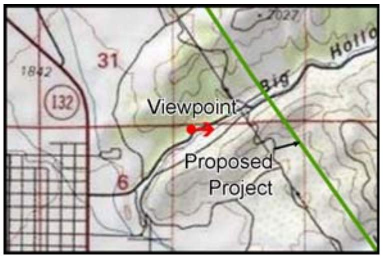
View northeast from residences along 500 North in Mount Pleasant, Utah

Weak contrast would result from the construction and operation of the proposed Project in a partially enclosed landscape setting from residences within Mount Pleasant, Utah. The proposed Project would cross relatively flat to slightly rolling terrain and where visible, would be backdropped by adjacent terrain. Disturbances associated with construction of access roads and clearing of vegetation within the right-of-way would not be visible from this KOP due to topographic and structural screening. The proposed structures would be located 1.2 miles away from this viewpoint and would be mostly screened from view. Where visible, the proposed structures would introduce a weak/moderate structure contrast into the landscape.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/12/2009
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 264 Big Hollow WMA Destination Route	Township: 14S Range: 3E	
VRM Class/VQO: III	Section: 5	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Domed, pyramidal, rolling	Dense vegetation transitioning to stippled areas along ridges	Vertical, rhythmic; geometric
Line	Diagonal, horizontal, curvilinear	Diagonal, butt to diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, light browns	Light and dark greens	Reflective, gray, dark brown
Texture	Fine to medium in exposed rocks	Fine to medium grain	Medium grain, medium density, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Diagonal, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, light browns	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■				■		
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

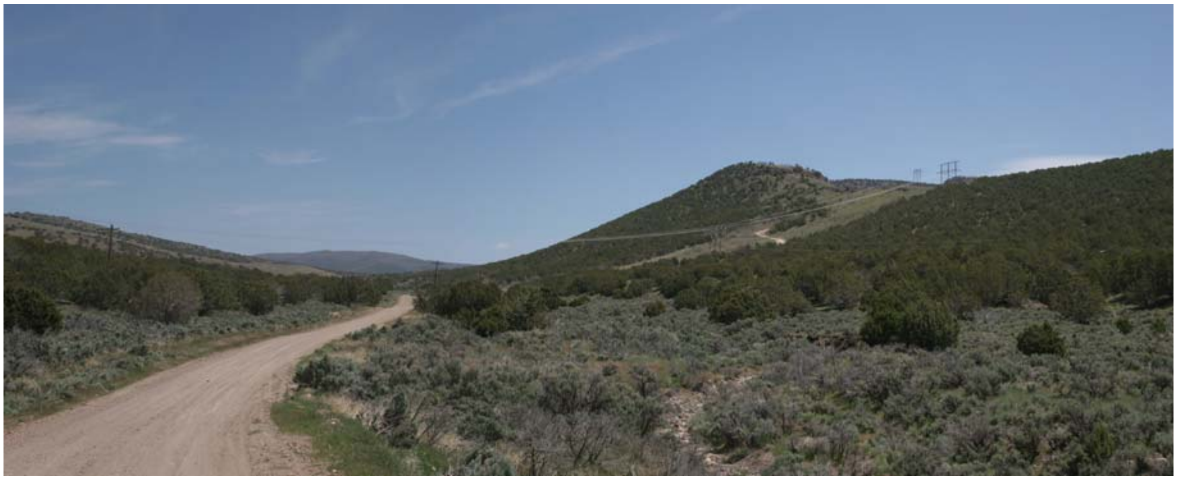
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/12/2009
BLM Field Office/National Forest:	Richfield Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



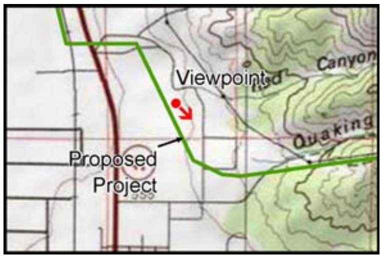
View east from Big Hollow Road, Utah

Moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated as VRM Class III as viewed from Big Hollow Road. The proposed Project would cross moderately steep terrain and would include right-of-way clearing through pinyon-juniper vegetation which would introduce additional geometric forms similar to the existing transmission line corridor. Construction access would produce curvilinear lines consistent with the existing transmission line access roads. The proposed structures would be seen at approximately 0.75 mile and would produce a weak/moderate structure contrast due to the adjacent existing 345kV and 138kV transmission lines.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 12S	Location Sketch
Key Observation Point # 265 Interstate 15 (Nephi)	Range: 1E	
VRM Class/VQO: n/a	Section: 28	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Angular, undulating, steep	Amorphous patches, stippled areas	Tall, vertical, geometric, transparent
Line	Diagonal, hard, rolling	Flowing, diffuse and butt edges	Vertical, complex
Color	Grays, tans	Dark greens, tans, gray-green	Dull gray
Texture	Fine to medium grain	Medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical, rhythmic and diminishing; complex
Line	Curvilinear, geometric	Bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■				■		
	Line		■				■			■			
	Color			■				■				■	
	Texture			■			■				■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

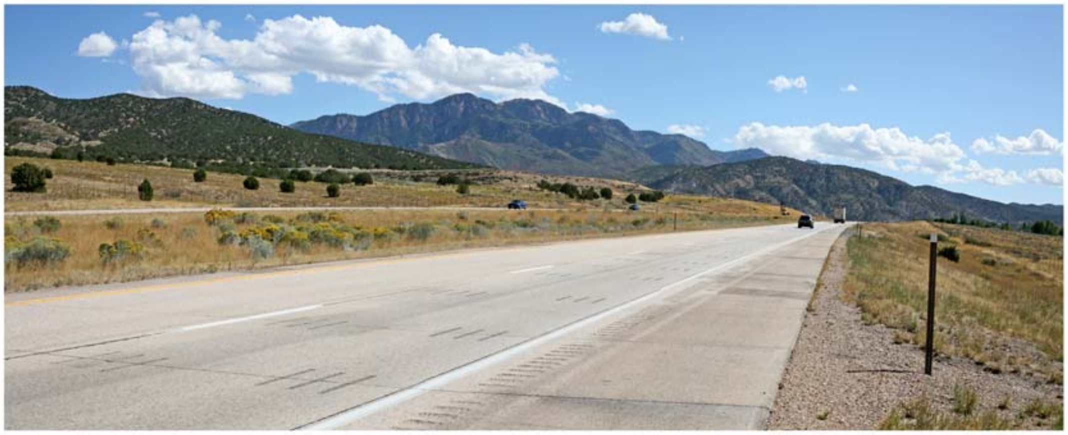
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/26/2011
BLM Field Office/National Forest:	Fillmore Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



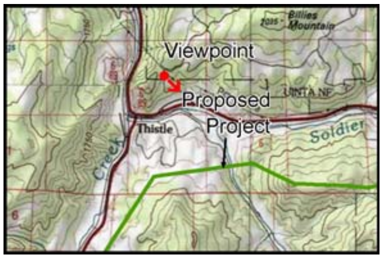
View southeast from Interstate 15 adjacent to Nephi, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from Interstate 15. The proposed Project crosses moderately steep terrain and would be skylined as it crosses the foothills. Disturbance associated with construction access would generate a weak/moderate contrast with existing landforms through the addition of geometric and curvilinear lines. The geometric form created by right-of-way vegetation clearing would produce a moderate level of landscape contrast. The proposed structures would be seen 0.3 mile away in an area with several existing transmission lines. Due to the proximity of the proposed Project to this viewpoint and the existing transmission lines, a moderate level of structure contrast was assessed. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast produced by the proposed Project on the steep, pinyon-juniper foothills.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Salt Lake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 266 U.S. Highway 6 (Spanish Fork Canyon)	Township: 9S Range: 4E	
VRM Class/VQO: n/a	Section: 27	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, prominent, rugged	Amorphous patches, stippled areas	Vertical, thin, triangular
Line	Diagonal, undulating, bold	Complex, butt and diffuse edges	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans, grays	Greens, tans, seasonal variation	Grays, browns
Texture	Medium to coarse grain	Medium to coarse grain	Medium grain, medium to sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin, triangular
Line	Curvilinear, geometric	Angular, butt edge	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans, grays	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		▨				▨					▨	
	Line		▨				▨					▨	
	Color		▨				▨					▨	
	Texture		▨				▨				▨		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

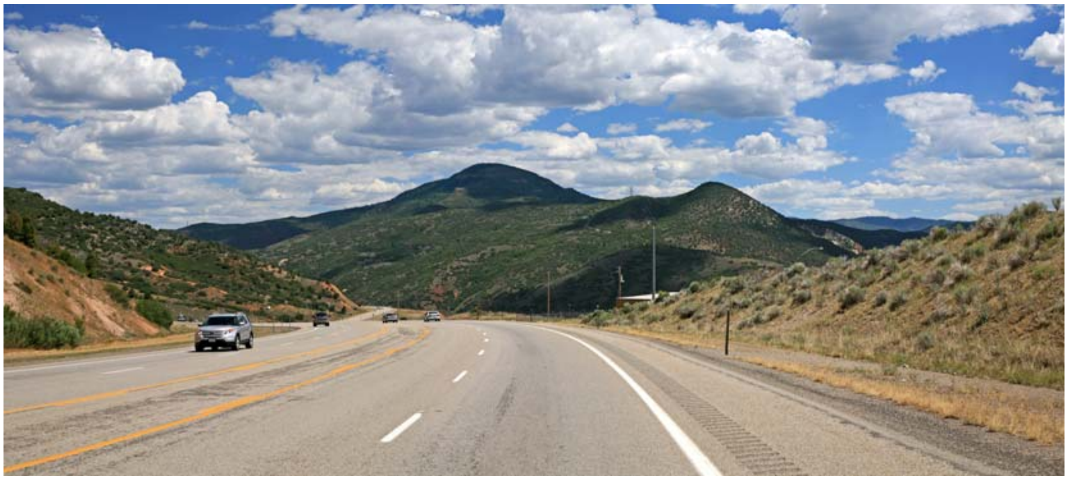
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Salt Lake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

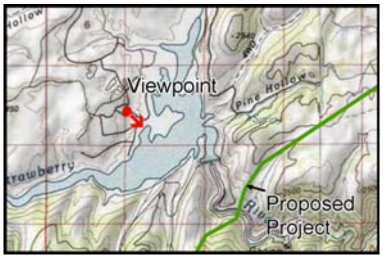


View southeast on U.S. Highway 6 in Spanish Fork Canyon, Utah

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from U.S. Highway 6. The proposed Project crosses steep terrain and would be partially skylined along the top of the ridge adjacent to an existing 345kV transmission line. Disturbance associated with the construction of an access road would introduce additional curvilinear lines into the existing landscape. Vegetation clearing in the right-of-way would produce additional geometric vegetation forms with angular, butt edges. The proposed structures would be seen at approximately 1.5 miles in context with an existing transmission line. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast produced by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 267 Battle Flats Recreation Area (Strawberry Reservoir)	Township: 4S Range: 10W	
VRM Class/VQO: n/a	Section: 8	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, moderate slope	Diverse, numerous amorphous patches	Thin, vertical
Line	Curving, undulating, angular	Butt and diffuse edges	Thin, vertical; thin/weak concave (conductors)
Color	Tans, blues, reflective	Dark greens, sage greens, tans, seasonal variety	Dull gray
Texture	Medium grain	Medium to coarse grain	Uniform repeating medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Thin, vertical
Line	Curvilinear, geometric	Bold, butt edge	Thin, vertical; thin/weak concave (conductors)
Color	Tans	Tans, gray-green	Dull gray
Texture	Fine grain	Fine grain	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■					■	
	Line		■				■					■	
	Color			■				■				■	
	Texture			■				■			■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

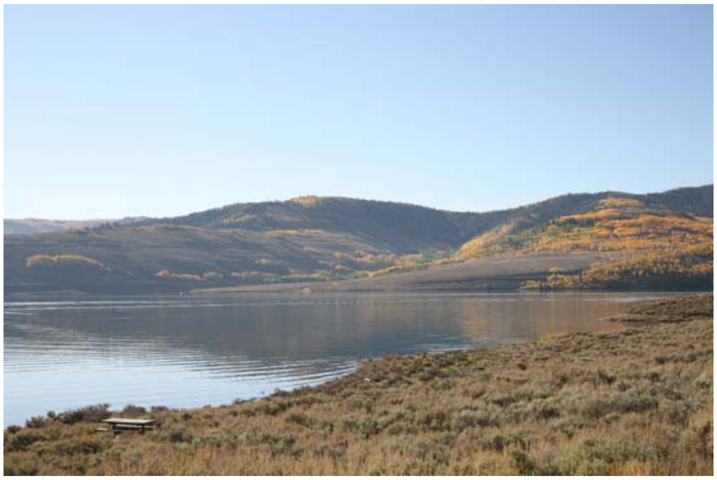
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



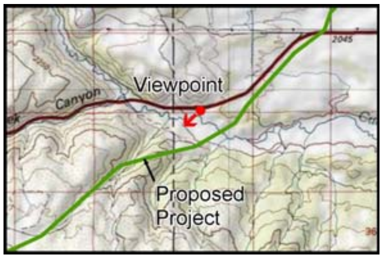
View southeast from Battle Flats Recreation Area, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from the Battle Flats Recreation Area. The proposed Project crosses steep terrain and would be mostly backdropped by adjacent terrain. Disturbance associated with construction access would introduce additional curvilinear lines and geometric forms into the landscape. Vegetation clearing within the right-of-way would produce a geometric shape and a butt edge with existing vegetation outside of the right-of-way. The proposed structures would be seen approximately 2 miles away with intermittent views of the adjacent existing 345kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 268 U.S. Highway 40 Pullout (west of Fruitland)	Township: 3S Range: 9W	
VRM Class/VQO: n/a	Section: 22	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, moderate slope	Diverse, numerous amorphous patches	Vertical, rhythmic; complex geometric/triangular
Line	Curving, undulating, angular	Butt and diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, reds	Dark greens, sage greens, tans, seasonal variety	Dull gray, transparent
Texture	Medium grain	Medium to coarse grain	Repeating coarse to medium grain and density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric tower pads and access through moderately steep slope	Geometric clearings with reestablished low vegetation	Bold, vertical, rhythmic; complex geometric/triangular
Line	Thin diagonal, horizontal	Diagonal and horizontal butt edges created at clearing	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■			■		
Line		■				■				■		
Color							■				■	
Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

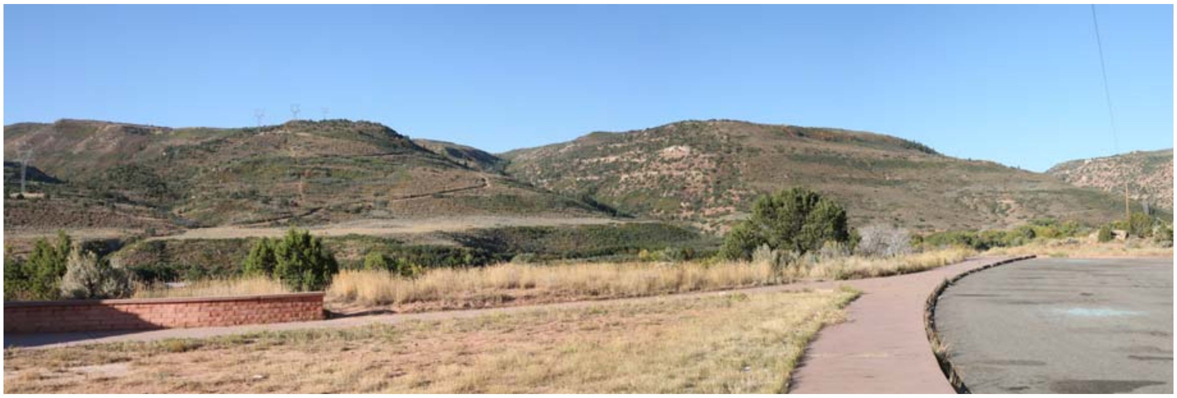
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



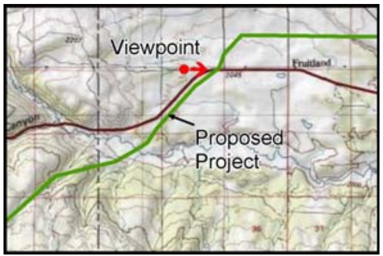
View southwest from overlook along U.S. Highway 40 in Fruitland, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a partially enclosed landscape setting as viewed from the U.S. Highway 40 pullout west of Fruitland. The proposed Project crosses steep terrain and would be mostly backdropped by adjacent terrain, except for the towers located on the ridgeline. Disturbance associated with construction access would introduce curvilinear lines and geometric forms consistent with access roads for the adjacent 345kV transmission line. Vegetation clearing in the right-of-way would produce a geometric form with butt edges
which would contrast with existing vegetation patterns. The proposed structures would be seen at approximately 0.5 mile from an inferior viewing position in context with an existing 345kV transmission line with similar form, line, color, and texture components.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 269 Fruitland residential	Township: 3S Range: 9W	
VRM Class/VQO: n/a	Section: 23	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, level to rolling	Low indistinct patches, stippled areas	Vertical, rhythmic and diminishing; geometric
Line	Weak, horizontal, undulating, continuous	Indistinct, weak diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans	Tans, browns, greens	Dull gray, transparent
Texture	Fine to medium grain	Fine to medium grain	Repeating/diminishing coarse to medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

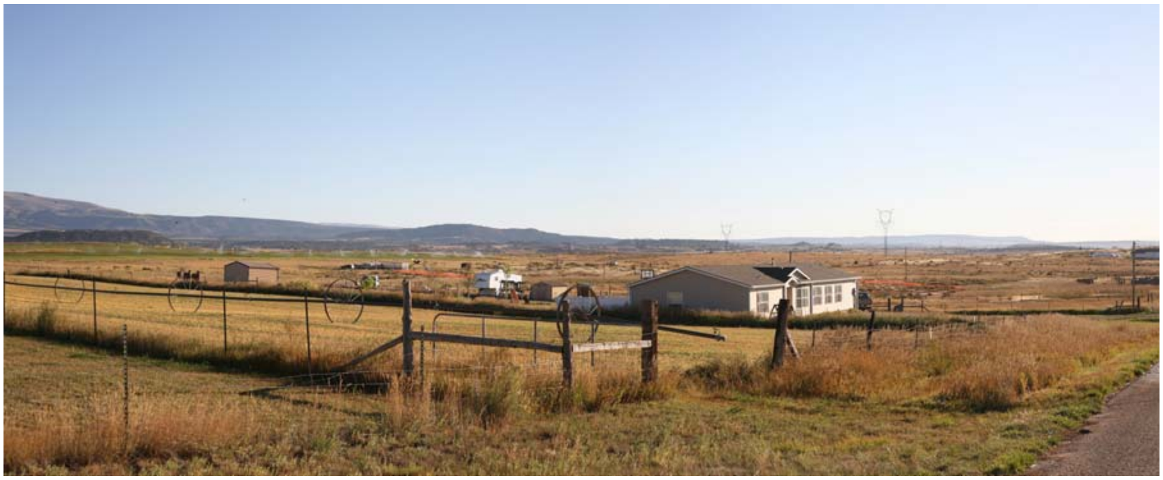
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View east from residences in Fruitland, Utah

Weak contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting as viewed from residences in Fruitland. The proposed Project would traverse mostly level terrain and be viewed from a superior viewing position. As a result of this viewing position, ground disturbance associated with the construction of access roads and tower pads would be more apparent but would be consistent with existing landforms modifications; therefore, contrast with landforms was evaluated to be weak. Due to the low-growing vegetation located in the proposed right-of-way, vegetation clearing would be minimal and when revegetated, a weak contrast with existing vegetative patterns would occur. The proposed structures would be seen at approximately 0.5 mile behind an existing 345kV transmission line with similar design characteristics. Due to the dominance of the existing transmission line, structure contrast was assessed to be at a low level.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

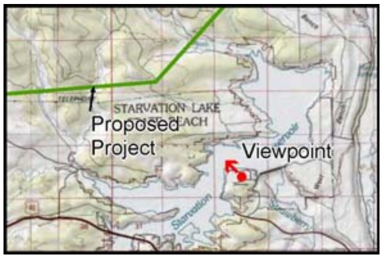
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
270 Starvation Reservoir

VRM Class/VQO:
n/a

Location:
Township: 3S
Range: 5W
Section: 28

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, angular	Amorphous patches, stippled areas	Vertical, geometric, cylindrical
Line	Horizontal, diagonal, parallel	Diffuse to bold edges from juniper stands	Vertical
Color	Tans, reds, blues	Light tan (grasses), dark green (juniper)	Reflective, gray, tans
Texture	Fine to medium texture	Medium grain, uneven/random	Uniform repeating medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Thin, vertical
Line	Curvilinear, geometric	Indistinct, broken, regular	Thin, vertical; thin/weak concave (conductors)
Color	Tans, reds	Sage greens, tans	Dull gray
Texture	Fine grain	Fine grain	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■				■	
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

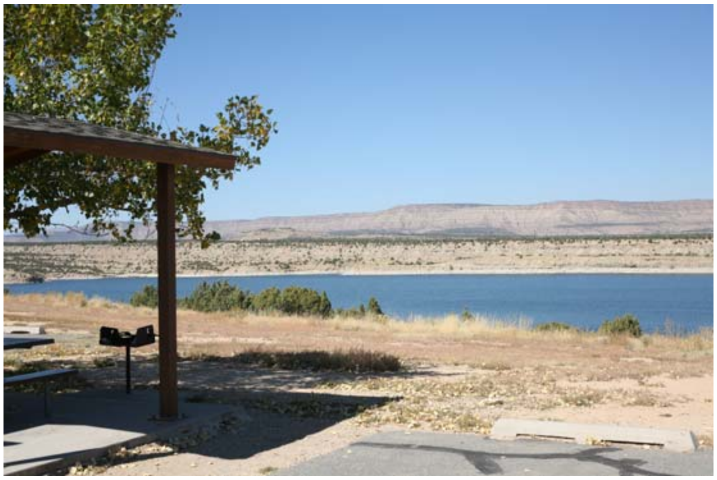
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



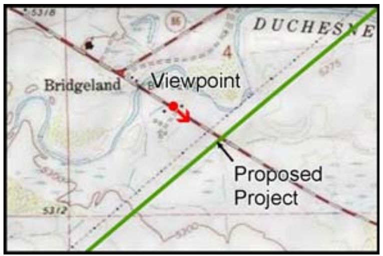
View northwest from Mountain View Campground in Starvation State Park, Utah

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from the Starvation State Park. The proposed Project crosses flat to gently rolling terrain and would be backdropped by adjacent terrain. Disturbance associated with the construction of access roads as well as vegetation clearing in the right-of-way would be mostly screened. In locations where these project features would be visible, they would introduce weak horizontal lines and geometric forms. The proposed structures would be seen at approximately 2.5 miles from a level to slightly inferior viewing position in context with an existing 345kV transmission line, therefore, structure was assessed at a weak level.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 271 Bridgeland residential	Township: 4S Range: 3W	
VRM Class/VQO: n/a	Section: 4	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, indistinct	Amorphous, irregular	Vertical, geometric
Line	Horizontal, curving	Butt edge between riparian vegetation and agricultural fields	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays	Variety of greens (deep greens, sage greens, medium greens) and	Gray, brown
Texture	Fine grain	Fine to medium grain	Coarse grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Tans, grays	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			▨			▨				▨		
Elements: Line			▨				▨			▨		
Elements: Color			▨				▨			▨		
Elements: Texture			▨				▨			▨		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

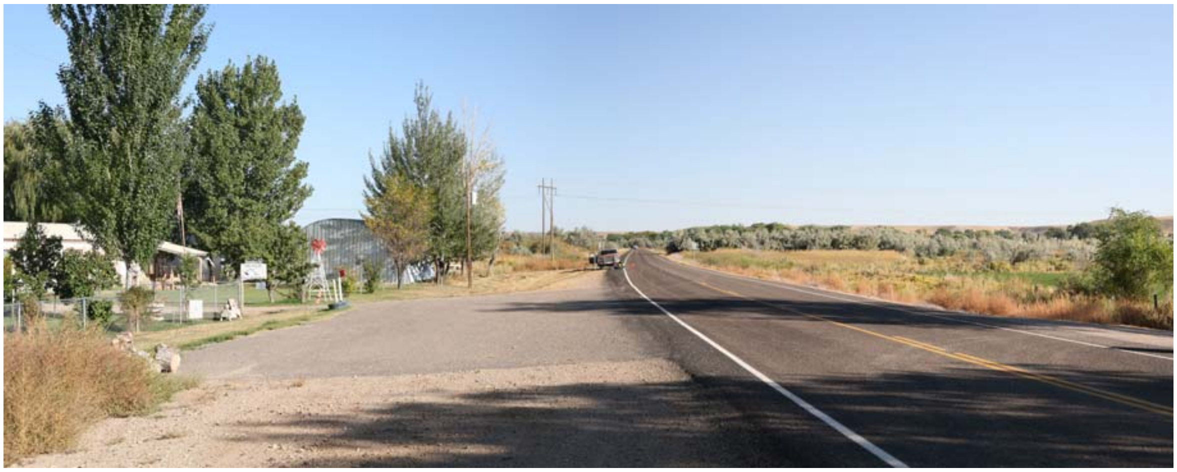
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast from East River Road adjacent to residences in Bridgeland, UT

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting. The proposed Project crosses flat terrain and would be partially screened by vegetation. Views of disturbance associated with construction access and right-of-way vegetation clearing would be mostly screened but where visible, would introduce curvilinear lines and geometric forms into the landscape. The proposed structures would be seen at approximately 0.25 mile and in context with an existing 138kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

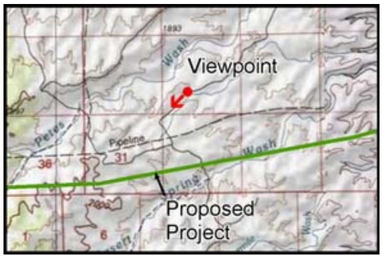
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
272 Sand Wash North Destination Route

VRM Class/VQO:
IV

Location:
Township: 10S
Range: 17E
Section: 29

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat/rolling, simple	Low, amorphous patches and stippled areas	n/a
Line	Horizontal, undulating	Diffuse and butt edges between shrubland and grasslands	n/a
Color	Monotone, beige, tans	Subtle, greens/yellows	n/a
Texture	Fine to medium grain	Fine grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Beige, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				■				■	■			
Elements: Line				■				■		■		
Elements: Color				■				■		■		
Elements: Texture				■				■	■			

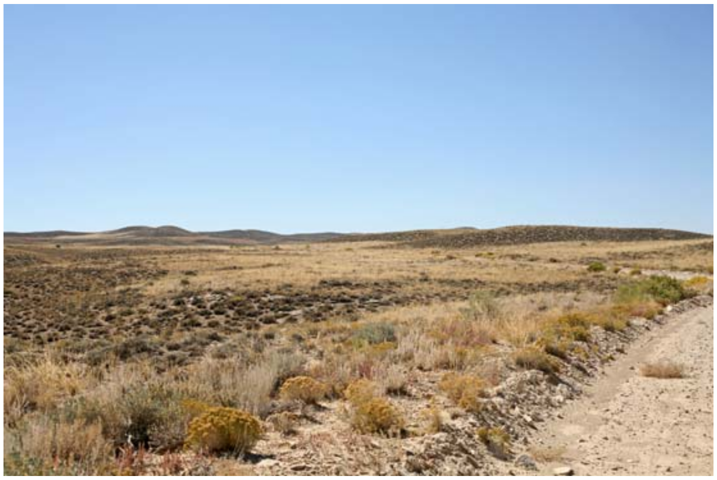
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

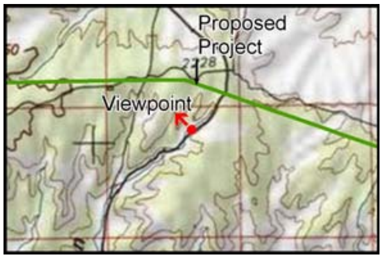


View southwest from Sand Wash Road, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting with VRM Class IV land and associated with Sand Wash Road which provides access to North Desolation Canyon. The proposed Project would be viewed from a level position as it crosses rolling terrain in a skylined condition. Disturbance to existing landform and vegetation characteristics, associated with construction of access roads and tower pads, would not be visible from this viewpoint. The proposed structures and conductors would be seen at approximately 1 mile and would produce a moderate/strong contrast with existing structural elements of form, line, color, and texture.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 11S	Location Sketch 
Key Observation Point # 273 Nine Mile Canyon Scenic Backway	Range: 15E	
VRM Class/VQO: III	Section: 9	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, rounded	Stippled, regular	n/a
Line	Continuous, horizontal, angular	Diffuse edges, continuous	n/a
Color	Tans	Light tan (grasses), dark green (juniper)	n/a
Texture	Fine to medium grain	Medium grain, dense	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

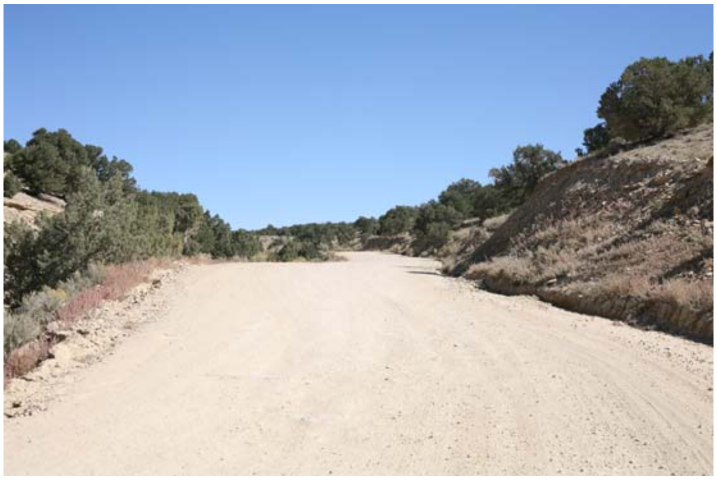
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



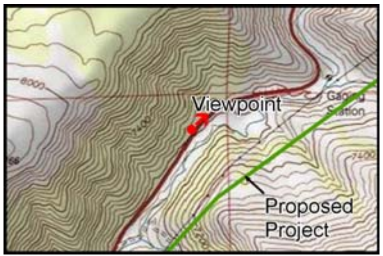
View northwest from Nine Mile Canyon Scenic Backway, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from the Nine Mile Canyon Scenic Backway through lands designated as VRM Class III. The proposed Project would cross rolling terrain and would be skylined from an inferior viewing position. Disturbance associated with the construction access roads and right-of-way vegetation clearing would be mostly screened by topography. The proposed structures would be seen at 0.4 mile and would introduce a strong structure contrast in the landscape. To reduce contrast on views along this scenic road, selective mitigation measure #9 (maximize span length) would be applied to limit dominance of transmission structures being located adjacent to the road.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 274 Indian Canyon Scenic Byway (U.S. Highway 191)	Township: 12S Range: 10E	
VRM Class/VQO: n/a	Section: 21	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Vertical, prominent, v-shaped	Amorphous patches, pyramidal	Vertical, geometric
Line	Bold, diagonal, rugged	Irregular, broken, vertical, butt edge (existing right-of-way)	Vertical, concave/horizontal
Color	Grays, tans (little exposed soil)	Greens, tans, seasonal variation	Brown
Texture	Coarse grain	Medium grain	Ordered, fine grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal, geometric pads for towers, blocky	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Angular, bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Grays, tans	Tans, gray-green	Dull gray, transparent
Texture	Fine to medium grain	Fine grained	Repeating coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form	■				■				■			
Elements: Line	■					■				■		
Elements: Color		■				■			■			
Elements: Texture		■				■				■		

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

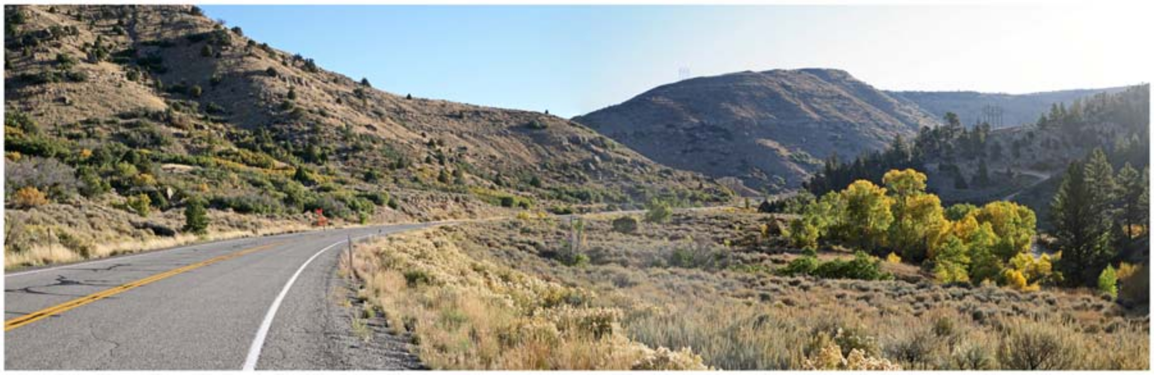
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Indian Canyon Scenic Byway (U.S. Highway 191), Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting viewed from the Indian Canyon Scenic Byway. The proposed Project would cross steep terrain and would be predominately backdropped by the adjacent terrain from an inferior viewer position except where the distant ridge would be traversed. In this area, structures would be skylined in a manner similar to the existing 138kV transmission line. Disturbances associated with construction access roads and right-of-way vegetation clearing would introduce additional geometric forms into the landscape generating a moderate/strong level of contrast. The proposed structures would be seen approximately 0.5 mile away in context with a smaller 138kV transmission line. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied to reduce landscape contrast generated by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

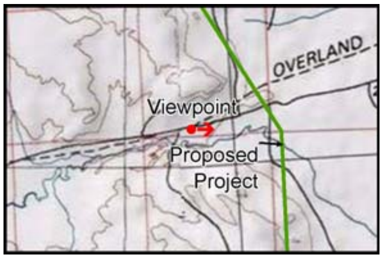
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
275 Overland Historic Trail

VRM Class/VQO:
III

Location:
Township: 17N
Range: 94W
Section: 21

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently rolling to flat, level	Low, amorphous patches	Cylindrical, low
Line	Undulating horizontal, continuous	Irregular, diffuse, indistinguishable to butt edge (at road)	Short vertical and horizontal
Color	Browns, tans, grays (road)	Greens, tans, yellows	Dark, dull green, tans
Texture	Fine grain	Fine to medium grain	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric/horizontal clearings for tower pads and access	Geometric portions for tower pads and access	Vertical; complex, triangular, geometric
Line	Undulating horizontal	Creating butt edge at clearing	Diagonal, horizontal; thin concave (conductors)
Color	Browns	Low growing greens, tans, yellows	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■			■		
	Texture			■				■			■		

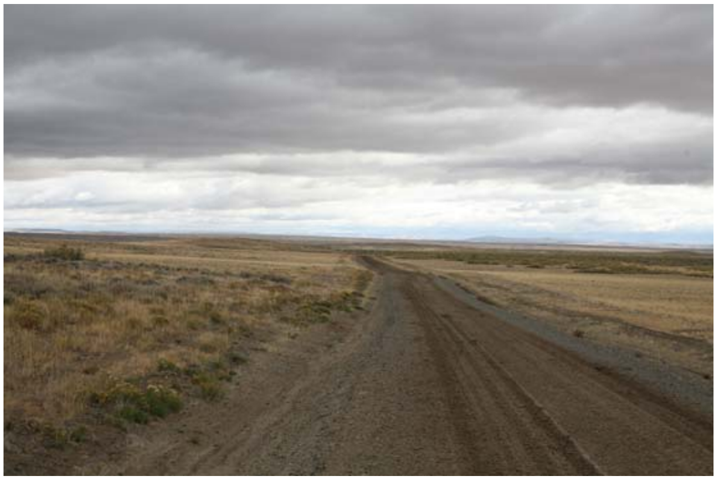
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



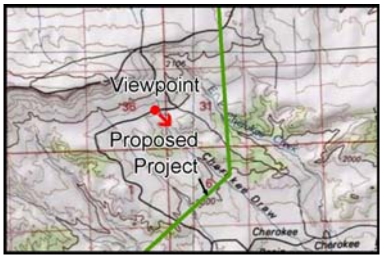
View east from Eureka Headquarters Road (adjacent to Overland Historic Trail), Wyoming

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation and associated with the Overland Historic Trail along Eureka Headquarters Road. The proposed Project would be seen from a level position as is it crosses relatively flat terrain in a skylined condition. Disturbance associated with construction access and tower pads would have weak contrast with landform and vegetation elements of form, line, color, and texture. The proposed structures and conductors would be visible at approximately 1 mile and would introduce a moderate/strong structure contrast. To reduce contrast, selective mitigation measure #9 (maximize span length) would be applied to limit dominance of transmission structures being located adjacent to the trail/road and bring the proposed Project into compliance with the definition of a VRM Class III objective.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/3/2013
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 276 Cherokee Historic Trail	Township: 13N Range: 94W	
VRM Class/VQO: III	Section: 31	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low, rolling	Indistinct, amorphous and geometric patches, some stippled	n/a
Line	Undulating, layered, horizontal	Indistinct, diffuse and butt edges	n/a
Color	Browns, tans	Greens, yellows, sage, tan	n/a
Texture	Fine grain	Fine to medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Low, rolling	Geometric, horizontal cleared portions for tower pads and access	Vertical, rhythmic; geometric/triangular
Line	Undulating horizontal, diagonal	Creating butt horizontal and diagonal edges at clearings	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Greens, yellows, tan from remaining/reseeded vegetation	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		▨				▨			▨			
Elements: Line		▨				▨			▨			
Elements: Color			▨				▨			▨		
Elements: Texture			▨				▨			▨		

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

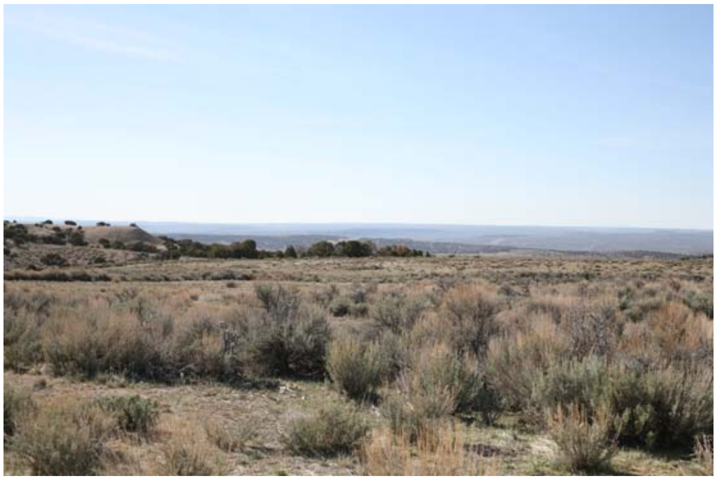
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/3/2013
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast towards Cherokee Historic Trail through the Cherokee Basin, Wyoming

Moderate/strong contrast would result form the construction and operation of the proposed Project in an panoramic landscape setting with VRM Class III designation and viewed from the Cherokee Historic Trail. The proposed Project would cross varying terrain in a partially screened to skylined conditions. Disturbance to landform and vegetation associated with construction access and tower pad earthwork would have moderate contrast with landform elements of form and line with weak contrast for color and texture as thin contrasting diagonal lines would be introduced. The Project structures and conductors would be visible at 1 mile above the horizon and introduce strong contrast for structure elements of form and line with moderate contrast for color and texture. To reduce contrast, selective mitigation measure #3 (minimize ground disturbance) would be applied to minimizing slope cut and fill in the rolling terrain seen from this KOP; however, moderate/strong structure contrast would remain because of the skylined structures and conductors.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

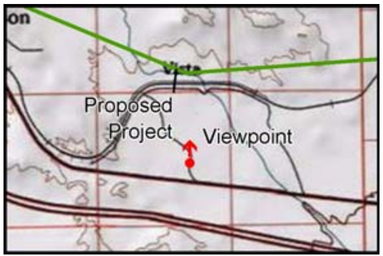
Project Name:
Energy Gateway South
Transmission Project

Key Observation Point
# 279 Old Spanish National Historic
Trail (near Thompson Springs)

VRM Class/VQO:
III

Location:
Township: 21S
Range: 20E
Section: 26

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, prominent Book Cliffs in background	Short, patchy	Vertical, regular
Line	Horizontal	Angular, broken, diffuse edges	Vertical, horizontal
Color	Tans, grays	Gray-greens, tans, browns, dull	Grays
Texture	Fine grain	Even, fine grain	Fine textured, medium density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

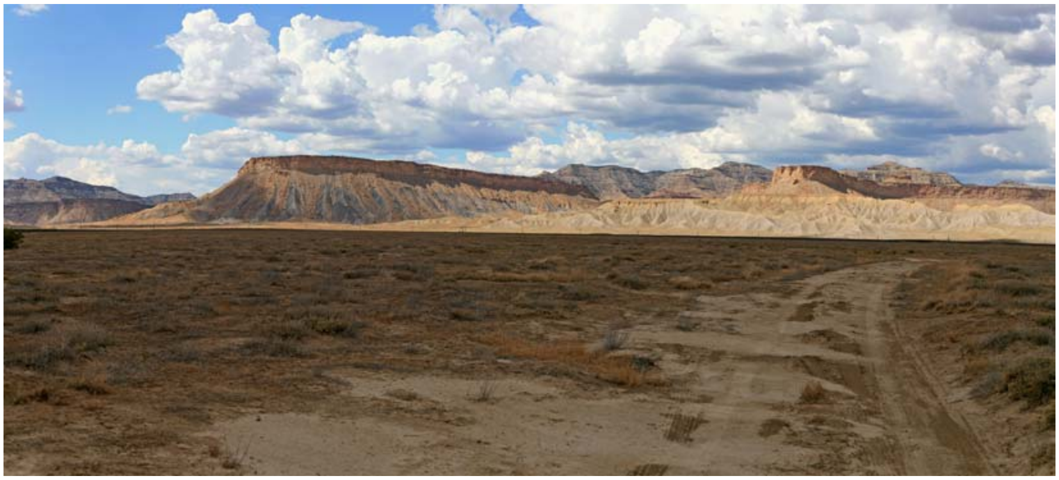
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



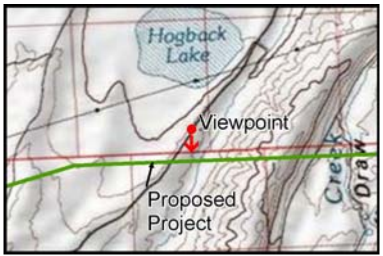
View north from two-track road east of Thompson Springs at crossing of Old Spanish Trail, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting as viewed from the Old Spanish National Historic Trail toward lands designated as VRM Class III. The proposed Project would cross level to rolling terrain and would be mostly backdropped by the Book Cliffs. Disturbance associated with the construction of access roads and right-of-way vegetation clearing would be intermittently screened by the raised railroad bed. Where visible, these disturbances would generate a weak landscape contrast. The proposed structures would be seen at approximately 0.7 mile from a level viewing position. The raised railroad bed and associated telegraph poles have introduced structural elements into the landscape, therefore the proposed Project would produce a moderate/strong structure contrast from this viewpoint.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 281 Rawlins to Baggs Historic Trail	Township: 21N Range: 88W Section: 34	
VRM Class/VQO: III		



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, level to diagonal and pyramidal, concave sloping	Low, amorphous patches	n/a
Line	Horizontal, diagonal	Irregular, diffuse and indistinguishable to butt edge (at	n/a
Color	Browns, tans, light gray (road)	Greens, tans, yellows	n/a
Texture	Fine grain	Fine to medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric clearing cut into slope for tower pad(s) and access	Cleared geometric portions for tower pads and access	Vertical, rhythmic; complex geometric/triangular
Line	Horizontal, diagonal	Creating butt edge with clearing	Diagonal, horizontal; concave (conductors)
Color	Contrasting tans from soil disturbance/exposure for clearings	Remaining or reestablished low vegetation, greens, tans, yellows	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■			■			
	Line		■				■			■			
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

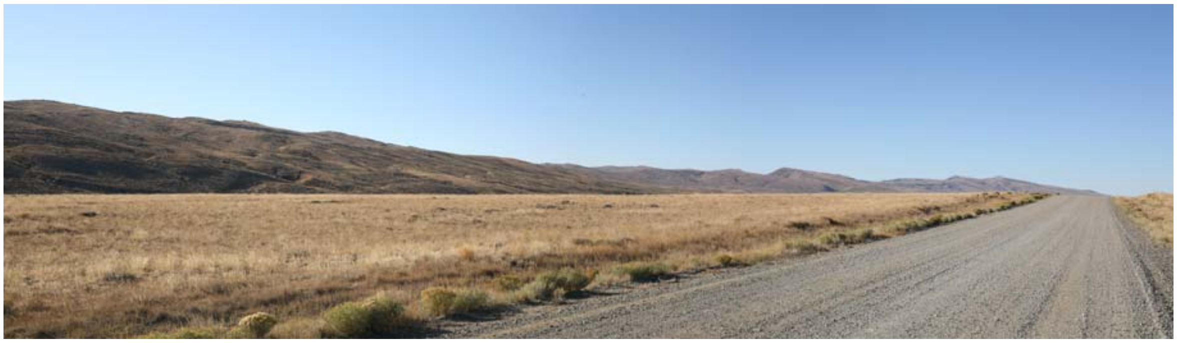
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Twenty Mile Road, Wyoming

Moderate/strong contrast would result from the construction and operation of the proposed Project in a focal/panoramic landscape setting associated with views from Twenty Mile Road and the Rawlins to Baggs Historic Trail. The proposed Project would be seen from an inferior to level viewing position as it crosses through varying sloped terrain in a skylined condition. Disturbance associated with construction access and tower pads would have weak/moderate contrast with existing landform and vegetation elements. The structures and conductors would be seen at approximately 0.25 mile and would have strong contrast with structure elements of form, line, color, and texture as portions of structures and conductors would be skylined above horizon in this natural landscape setting. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance) and #9 (maximize span length) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

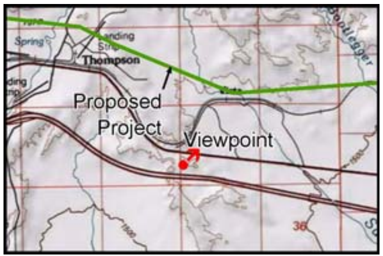
Project Name:
Energy Gateway South
Transmission Project

Key Observation Point
282 I-70 Thompson Welcome Center (Dinosaur Diamond SB)

VRM Class/VQO:
III

Location:
Township: 21S
Range: 20E
Section: 26

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Moderate slopes, plateaus, level Book Cliffs prominent in background	Indistinct, patches, stippled	n/a
Line	Horizontal, broken diagonal	Indistinct, irregular	n/a
Color	Tans, browns	gray-greens	n/a
Texture	Fine to medium grain	Medium grain, sparse/even	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform medium grain, medium to sparse density

Degree of Contrast

Degree of Contrast	Features: Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■			■		
Line			■				■			■		
Color			■				■			■		
Texture			■				■			■		

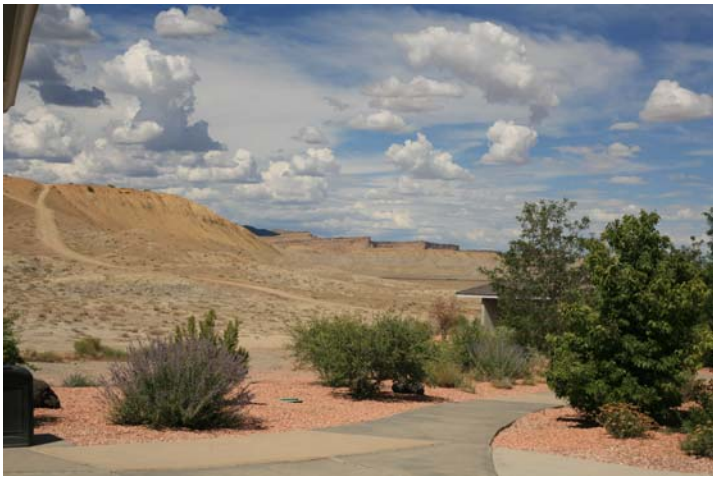
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northeast from Thompson Welcome Center, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting viewed from the Thompson Welcome Center toward land designated as VRM Class III. The proposed Project would cross rolling terrain and would be backdropped by adjacent terrain from a level to slightly inferior viewing position. Disturbance associated with construction access roads and clearing of vegetation within the right-of-way would mostly be screened by the rolling terrain but where visible, would introduce geometric shapes and curvilinear lines. The proposed structures would be seen at approximately 1.1 miles and would be partially screened by topography.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

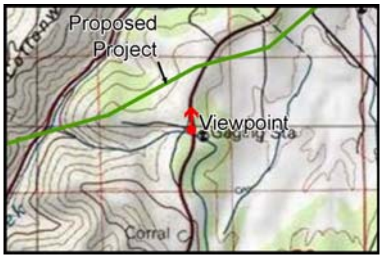
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
283 Energy Loop Scenic Byway (Utah State Route 31)

VRM Class/VQO:
n/a

Location:
Township: 13S
Range: 5E
Section: 26

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, rolling	Vertical, complex, amorphous	n/a
Line	Curving, continuous	Flowing, complex, irregular	n/a
Color	Tans, grays	Vivid, greens, tans, whites seasonal color	n/a
Texture	Smooth	Dense, medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Bold, vertical; complex geometric/triangular
Line	n/a	n/a	Vertical/diagonal, horizontal; concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form				■				■		■		
Line				■				■		■		
Color				■				■		■		
Texture				■				■		■		

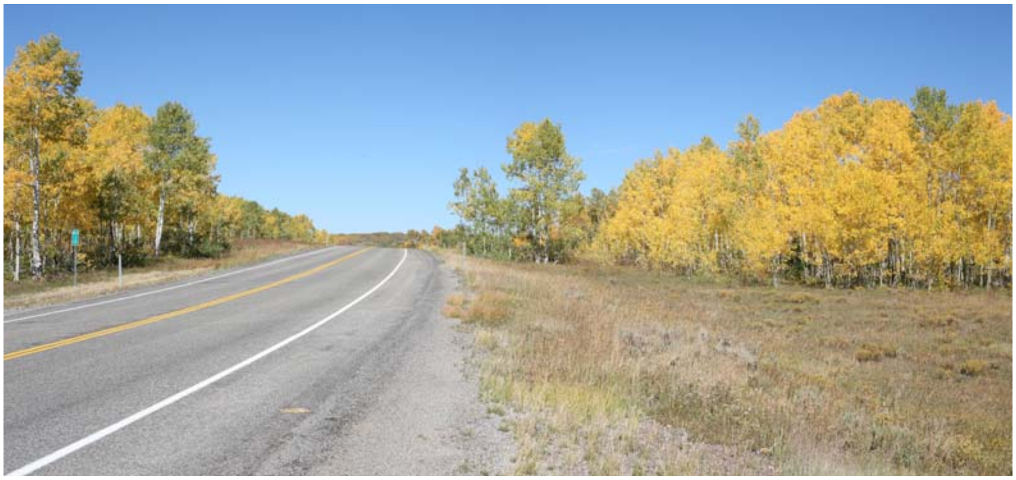
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



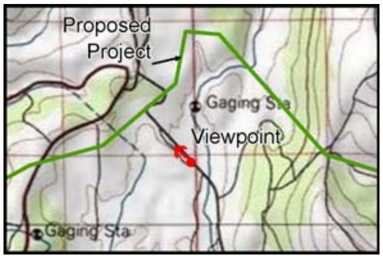
View north from Energy Loop Scenic Byway (Utah State Route 31), Utah

Moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting as viewed from the Energy Loop Scenic Byway. The proposed Project would cross rolling terrain and views would be mostly screened by vegetation. Construction access roads and right-of-way vegetation clearing would not be visible from this KOP due to vegetative screening. The proposed structures would be seen from approximately 0.5 mile away and where visible, the structures would be skylined. Selective mitigation measure #9 (maximize span length) would reduce contrast generated by the skylined structures by placing the structures further from the road which would increase the level of screening by the adjacent aspen groves.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 13S	Location Sketch
Key Observation Point # 284 Energy Loop Scenic Byway (Utah State Route 264)	Range: 6E	
VRM Class/VQO: Partial Retention	Section: 30	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Domed, diagonal, rounded	Vertical, pyramidal, amorphous	n/a
Line	Curving, continuous	Flowing, complex, irregular, butt edge	n/a
Color	Tans	Tans, greens, seasonal color	n/a
Texture	Medium grain	Medium grain, stippled, scattered	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Bold, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■			■				■			
	Line		■				■			■			
	Color			■			■			■			
	Texture		■				■			■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

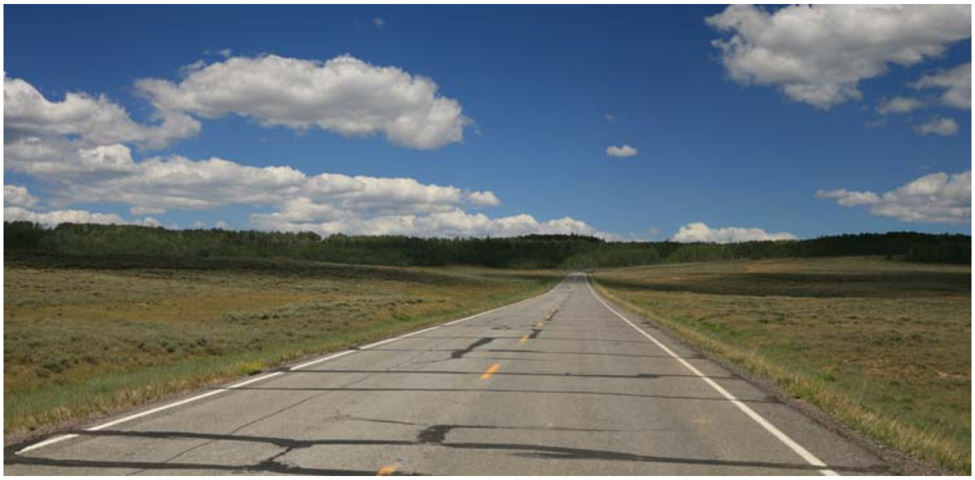
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from Energy Loop Scenic Byway (Utah State Route 264), Utah

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape designated by the Manti-La Sal National Forest as a partial retention VQO as viewed from the Energy Loop Scenic Byway. The proposed Project would cross rolling terrain and would be viewed from a slightly inferior position from this KOP. Ground disturbance associated with construction access would be visible and would introduce a moderate contrast with existing landforms. Right-of-way vegetation clearing would produce geometric forms into a landscape characterized by amorphous patches of aspen groves, therefore, the proposed Project would moderately contrast with existing vegetation patterns. The proposed structures would be seen at approximately 0.5 mile and would be partially backdropped by adjacent terrain. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce contrast on views from this scenic road.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

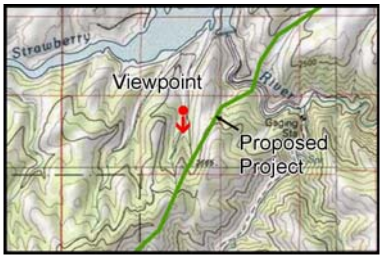
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
285 Aspen Grove Campground

VRM Class/VQO:
n/a

Location:
Township: 4S
Range: 10W
Section: 20

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, moderate slope	Diverse, numerous amorphous dense patches	Low, rectangular
Line	Curving, undulating, angular	Butt and diffuse edges	Horizontal and vertical
Color	Tans, limited exposed soil	Dark greens, sage greens, tans, seasonal variety	Greens and browns
Texture	Medium grain	Medium to coarse grain	Medium grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Tall, vertical, geometric, transparent
Line	Geometric, curvilinear	Bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, additional exposed soil	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■			■				■			
	Line	■				■				■			
	Color		■				■			■			
	Texture		■					■		■			

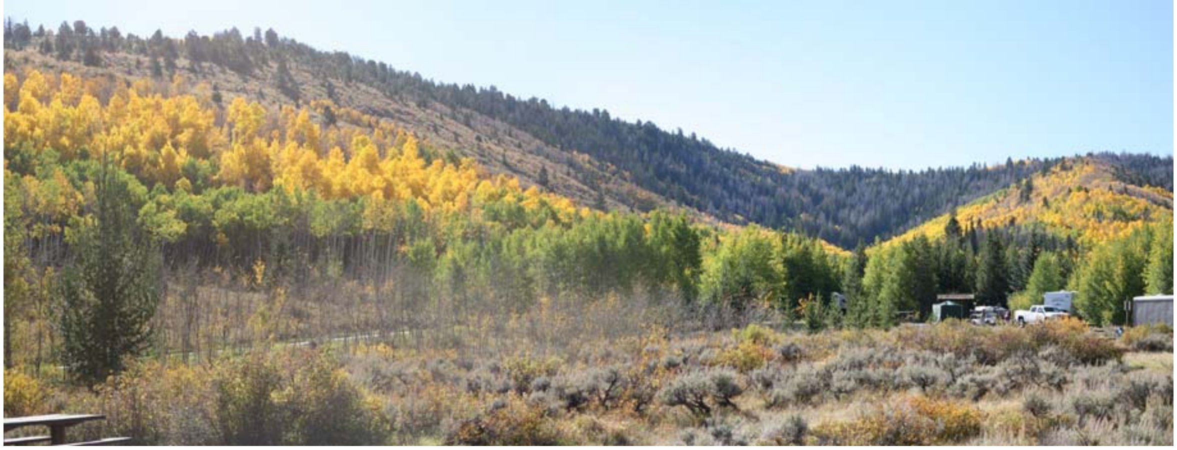
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



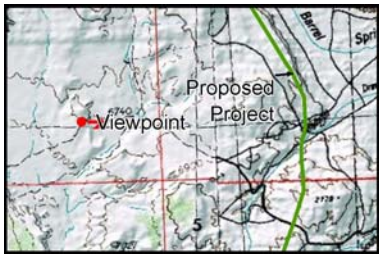
View south from Aspen Grove Campground (Strawberry Reservoir), Utah

Strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting from the Aspen Grove Campground. The proposed Project would cross steep terrain and due to the tall vegetation in the right-of-way, vegetation would be removed across the entire 250-foot wide right-of-way introducing a geometric form which is incongruent with existing vegetation patterns. The construction of construction access roads would produce curvilinear lines and geometric forms which would contrast with the existing landforms. The proposed structures would be seen at approximately 0.75 mile and would introduce strong contrast into the landscape since the existing 345kV transmission line is not visible from this campground. Selective mitigation measures #2 (limit construction of new access), #3 (minimize cut and fill) and #4 (minimize tree clearing) would be applied to reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/24/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 16N	Location Sketch
Key Observation Point # 286 Adobe Town WSA Destination Route (BLM Road 4411)	Range: 95W	
VRM Class/VQO: III	Section: 22	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling	Indistinct, with areas of stippling and clumping	Cylindrical
Line	Gently curving, horizontal	Indistinct, weak diffuse edges, weak butt edge (at road)	Weak vertical and horizontal silhouette
Color	Browns, tans	Greens, tans, yellow, grays	Tan
Texture	Fine to medium grain	Fine to medium grain	Fine grain, sparse, random

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Thin, vertical
Line	n/a	n/a	Thin vertical
Color	n/a	n/a	Dull gray
Texture	n/a	n/a	Uniform repeating fine grain, sparse density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form				▨				▨			▨	
Line				▨				▨			▨	
Color				▨				▨			▨	
Texture				▨				▨			▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

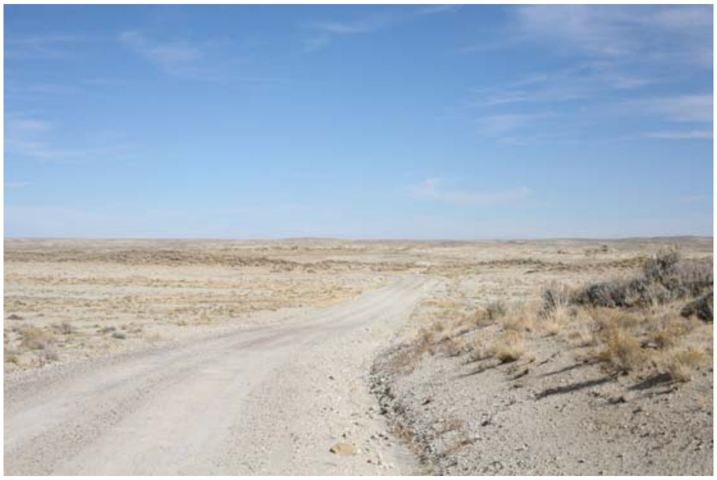
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/24/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View east from BLM Road 4411 (access to Adobe Town), Wyoming

Weak contrast would result from the construction and operation of the proposed Project in this panoramic landscape setting with VRM Class III designation as viewed from access to the Adobe Town Wilderness Study Area. The Project would be intermittently to fully screened by topography with few visible cultural modifications from oil and gas development. In locations where the proposed Project may be visible, only the top of the transmission structures would be seen approximately 6.5 miles away which would introduce a weak structure contrast.

This KOP location was chosen to represent the Adobe Town area because it is located in an area where transmission structures could be viewed in a skylined condition from a key access route for Adobe Town. Other areas where the Project could be viewed from within the Adobe Town Wilderness Study Area would likely occur where the Project would be viewed in a backdropped condition and therefore, would be visually absorbed into the landscape with less potential contrast associated with the Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

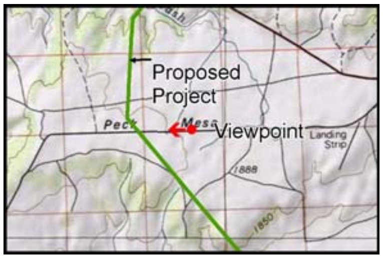
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
287 Moffat County Road 10 (views to Cross Mountain)

VRM Class/VQO:
III

Location:
Township: 7N
Range: 97W
Section: 23

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, level, rugged blocky	Indistinct, stippled	n/a
Line	Straight and undulating horizontal, diagonal	Diffuse and indistinguishable with butt edges (at roads)	n/a
Color	Browns, tans, grays	Greens, tans, yellow	n/a
Texture	Fine to coarse grain	Fine to medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨		▨			
	Line			▨				▨		▨			
	Color			▨				▨		▨			
	Texture			▨				▨		▨			

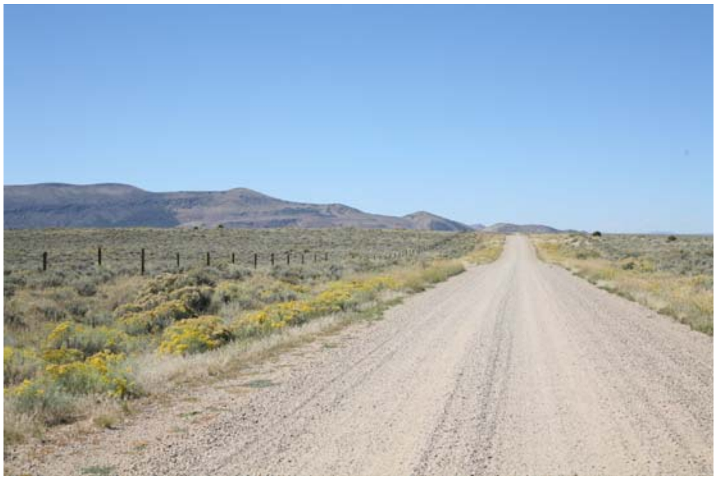
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



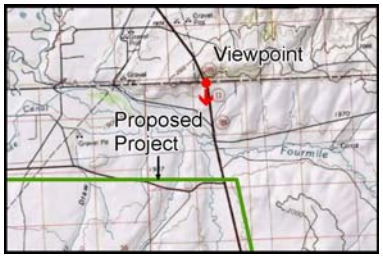
View west toward Cross Mountain from Moffat County Road 10, Colorado

Moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with VRM Class III designation associated with recreation access to the Cross Mountain Wilderness Study Area. Views toward Cross Mountain, distant landscape in the photo, are especially important from this key observation point. The proposed Project would be viewed from a slightly inferior viewing position as it crosses flat to rolling terrain with partial backdropping. Disturbance associated with construction access as well as vegetation clearing in the right-of-way would be mostly screened from view but where visible, would introduce curvilinear lines and geometric forms. The proposed structures would be seen approximately 0.75 mile away with partial backdropping of the structures south of the road (Cross Mountain) while structures to the north of the road would be skylined. To reduce contrast, selective mitigation measure #9 (maximize span length) would be applied to limit dominance of transmission structures being located adjacent to the road.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 12N	Location Sketch
Key Observation Point # 288 Colorado State Highway 13 (views to Bakers Peak)	Range: 91W	
VRM Class/VQO: III	Section: 8	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low, rolling, blocky	Indistinct, clumping with areas of stippling	Thin vertical, geometric, rectangular (buildings)
Line	Gently curving, straight and undulating horizontal	Indistinct, weak diffuse edges and butt edges (at roads, fence lines)	Vertical, diagonal, horizontal
Color	Browns, tans	Greens, tans, yellow	Subtle grays, browns, whites
Texture	Fine grain	Fine to medium grain	Fine grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Minimal disturbance for geometric tower pads and access through flat	Cleared geometric patches of low reestablished vegetation at tower	Vertical, thin, triangular
Line	Diagonal	Diagonal	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans	Tans, greens	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform medium grain, medium to sparse density

Degree of Contrast

Degree of Contrast	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			▨				▨			▨		
Line			▨				▨			▨		
Color			▨				▨				▨	
Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

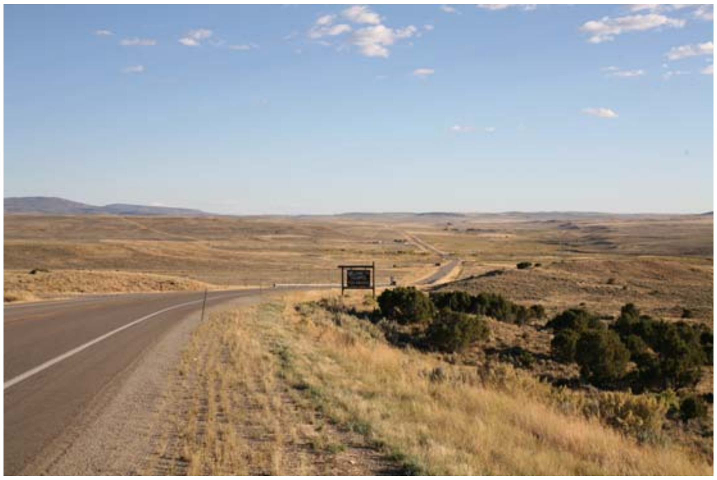
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Wyoming-Colorado Border on Colorado State Highway 13

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape designated by the BLM as VRM Class III as viewed from the Wyoming/Colorado border on Colorado State Highway 13. The proposed Project would cross flat to slightly rolling terrain and would be viewed from a superior position with the proposed Project in a backdropped condition. Disturbance associated with construction access to landform and vegetation would be visible and introduce weak contrast to landform and vegetation elements of form, line, color, and texture as similar conditions currently exist from this view. The proposed structures would be seen at approximately 2 miles and would introduce moderate contrast to structure elements of form and line with weak contrast to color and texture in a largely intact landscape with some modifications from oil/gas development and rangeland improvements.

Where the project would be viewed from Colorado State Highway 13 in close proximity and in a parallel condition to the highway, contrast would increase. The stronger contrast combined with the long duration views while traveling parallel to the Project would not be compliant with visual resource management objectives.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

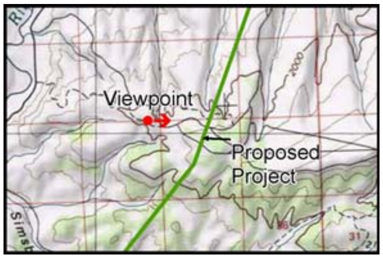
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
289 Godiva Rim

VRM Class/VQO:
III

Location:
Township: 8N
Range: 97W
Section: 20

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, moderate slopes	Amorphous patches and clumped groupings	n/a
Line	Diagonal, curving	Bold butt and Indistinct to weak diffuse edges a	n/a
Color	Tans, beige	Greens, tans, grays, yellow, tan	n/a
Texture	Fine to medium grain	Medium to coarse	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Thin continuous diagonal and geometric clearings for tower pads	Thin continuous diagonal patch(es) of low reestablished vegetation at	Vertical, rhythmic; geometric/triangular
Line	Diagonal	Diagonal thin butt edge at clearing for access and tower pads	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■		■			
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

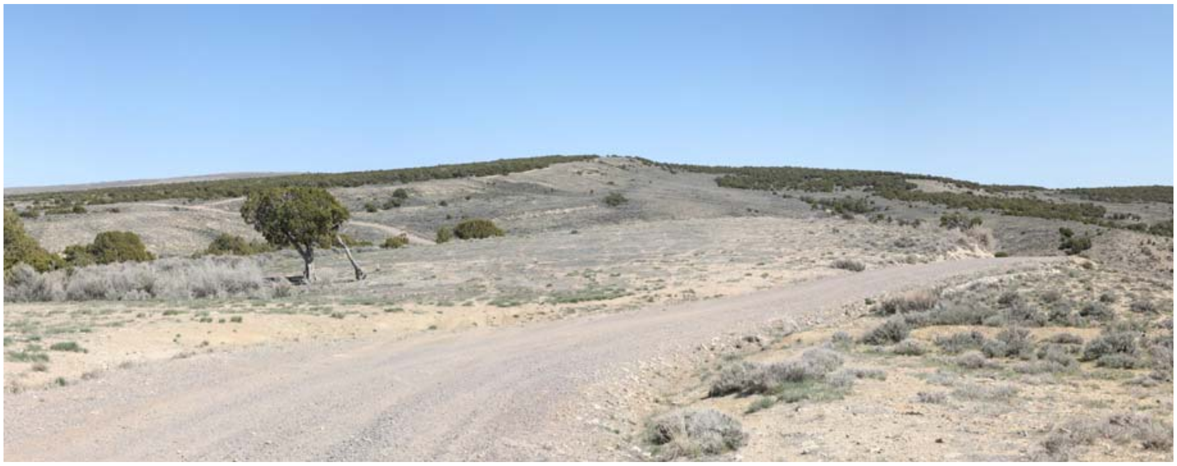
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



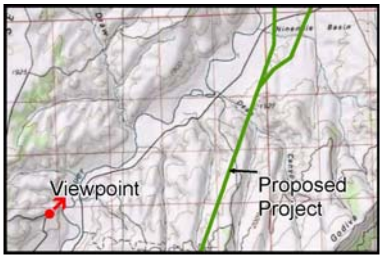
View east from Godiva Rim Road, Colorado

Moderate/strong contrast would result from the construction and operation of the proposed Project in a feature landscape setting associated with the Godiva Rim. The proposed Project would be visible from a level position as it crosses sloped terrain. Disturbance associated with construction access and tower pads would have weak contrast with landform and vegetation elements of form, line, color, and texture. The proposed structures and conductors would be visible at approximately 0.7 mile and have strong contrast with structure elements of form and line with moderate contrast with color, and texture as structures would be seen above the horizon in this natural landscape setting. Selective mitigation measure #3 (minimize ground disturbance) would reduce contrast on views resulting from the construction of access roads; however, moderate/strong structure contrast would remain because of the skylined structures and conductors.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 290 Moffat County Road 75 (recreation access)	Township: 10N Range: 97W	
VRM Class/VQO: III	Section: 11	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Low, rugged, blocky, braided BG: Indistinct, low, rolling	FG: Indistinct, amorphous with areas of stippling	n/a
Line	FG: Irregular, angular, banding, curving	FG: Indistinct, diffuse BG: Curvilinear, weak diffuse edges	n/a
Color	FG: Browns, tans, reflective BG: Browns, tans	FG: Sage greens, tans BG: Dark greens, sage greens, tans	n/a
Texture	FG: Smooth, medium to coarse grain BG: Fine grain	FG: Medium grain BG: Fine to medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Thin, vertical
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical
Color	Browns, tans	Sage greens, tans	Dull gray
Texture	Fine grain	Fine grain	Uniform repeating fine grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨				▨	
	Line			▨				▨				▨	
	Color			▨				▨				▨	
	Texture			▨				▨				▨	

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

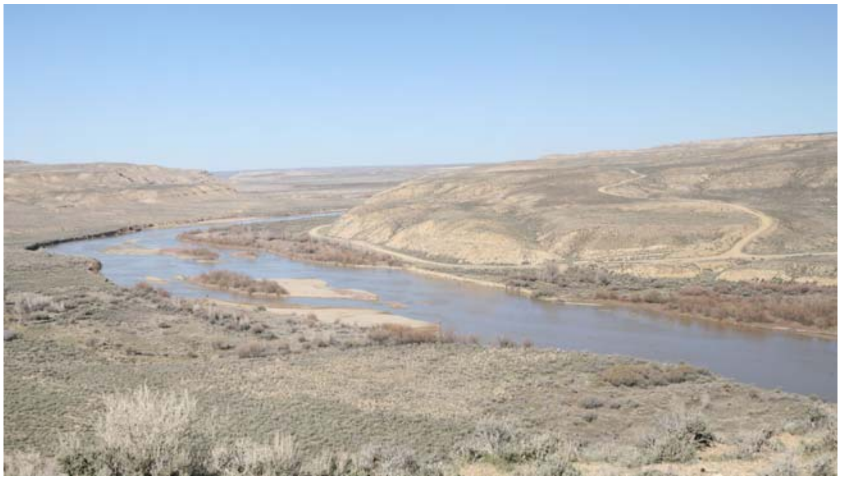
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



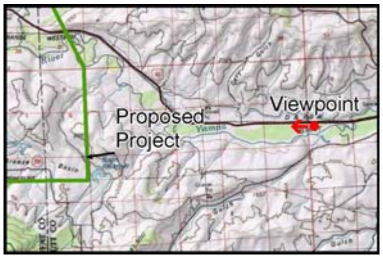
View northeast from Moffat County Road 75, Colorado

Due to the relocation of the Project off of Sevenmile Ridge, views toward the Project are mostly screened by topography along the Sevenmile Destination Route (proposed backcountry byway). As such, this key observation point was selected to display the potential contrast introduced by the Project at an overlook along this destination route with views of the Little Snake River. A weak contrast would result from the construction and operation of the proposed Project within a focal, panoramic landscape with VRM Class III designation and associated with Moffat County Road 75. The proposed Project would be seen from a superior viewing position as it crosses through a level area adjacent to the Little Snake River in the background beyond the two adjacent ridge landscapes. Disturbance associated with construction access and tower pads would introduce weak contrast into the landscape, where visible, through the geometric forms of these activities. The proposed structures and conductors would be visible 5 miles away and introduce a weak contrast since they would be backdropped by adjacent landscapes. The alternative route variation would introduce a lower level of contrast since the proposed Project would be located approximately 6 miles away from this viewpoint.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 6N	Location Sketch
Key Observation Point # 291 Yampa River State Park	Range: 88W	
VRM Class/VQO: n/a	Section: 7	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat to gently rolling	Amorphous and geometric patches, Clumped vertical/tall	Thin vertical, geometric/rectangular
Line	Horizontal, diagonal	Butt edges	Vertical, broken horizontal
Color	Light browns	Greens, yellow, tans, browns	Grays, brown
Texture	Fine grain	Fine to coarse grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	n/a
Line	n/a	n/a	n/a
Color	n/a	n/a	n/a
Texture	n/a	n/a	n/a

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨				▨
	Line				▨				▨				▨
	Color				▨				▨				▨
	Texture				▨				▨				▨

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

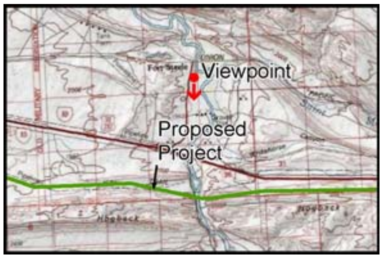
View west from Yampa River State Park, Colorado

Due to the distant view, over 5 miles from the proposed Project as well as vegetation and topographic screening, views from this portion of the Yampa River State Park would have no perceivable contrast from the construction and operation of the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/7/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 21N	Location Sketch
Key Observation Point # 295 Fort Steele Historic Site	Range: 85W	
VRM Class/VQO: III	Section: 23	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Low blocky to flat	Band/strip, amorphous and geometric patches	Thin vertical and horizontal, geometric/rectangular
Line	Undulating horizontal, diagonal	Diffuse and butt edges	Vertical, horizontal, diagonal
Color	Browns, tans	Dull and dark greens, yellows	Browns, subtle grays, greens, whites, reds
Texture	Fine to medium grain	Fine to coarse grain	Coarse grain, medium density groupings

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Thin, vertical
Line	n/a	n/a	Thin, vertical; thin/weak concave (conductors)
Color	n/a	n/a	Dull gray
Texture	n/a	n/a	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■			■	
	Line				■				■			■	
	Color				■				■			■	
	Texture				■				■			■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

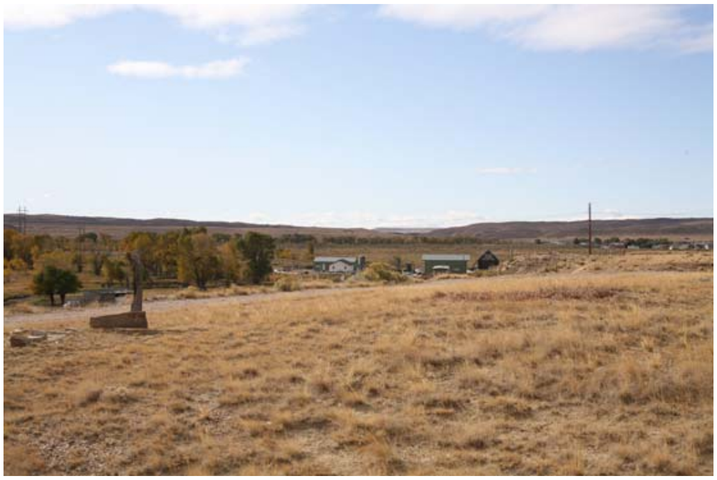
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/7/2011
BLM Field Office/National Forest:	Rawlins Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Fort Steele Cemetery, Wyoming

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting with a VRM Class IV designation as viewed from the Fort Steele State Historic Site. The proposed Project would cross low rolling terrain in an intermittently screened condition with portions of the proposed Project occurring in both backdropped and skylined conditions. Construction access and tower pad disturbance in the landform and vegetation components of contrast would not be visible from this KOP. The proposed structures would be seen approximately 2.5 miles away beyond an existing 230kV transmission line and interstate highway. Due to the distance of these views to the proposed Project and the existing cultural modifications, the structures would introduce weak structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

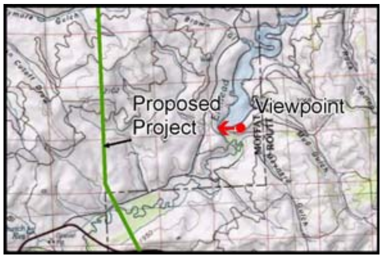
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 297 Elkhead Reservoir Campground

VRM Class/VQO:
n/a

Location:
Township: 7N
Range: 89W
Section: 16

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gently sloping, rolling, Flat	Low, amorphous patches, stippled in areas	Bold geometric
Line	Gently curving, undulating and straight horizontal	Diffuse ad butt edges	Straight, angular, vertical diagonal
Color	Browns, grays, bluish-gray, reflective	Variations of greens, yellow, tan, browns	Browns, tans, black
Texture	Fine grain, smooth	Fine to medium grain	Coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Thin, vertical
Line	n/a	n/a	Thin, vertical; thin/weak concave (conductors)
Color	n/a	n/a	Dull gray
Texture	n/a	n/a	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨			▨	
	Line				▨				▨			▨	
	Color				▨				▨			▨	
	Texture				▨				▨			▨	

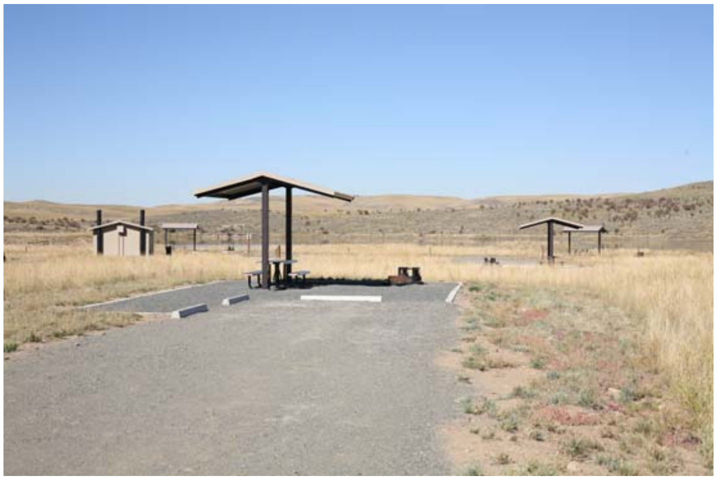
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/29/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



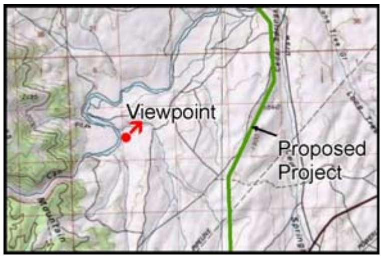
View west from Elkhead Reservoir Campground, Colorado

Weak contrast would occur from the construction and operation of the proposed Project within a panoramic landscape setting associated with recreational users at Elkhead Reservoir. The proposed Project would be intermittent to entirely screened by topography including construction access roads and any vegetation clearing within the right-of-way. In locations where the transmission structures may be seen, only the top portions of the structures would be visible from approximately 2.5 miles away which would introduce a weak structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 299 Yampa River Access for Cross Mountain	Township: 6N Range: 97W	
VRM Class/VQO: III	Section: 8	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Indistinct, low rolling, blocky	Indistinct, amorphous and geometric patches, areas of stippling	n/a
Line	Gently curving, sloping horizontal, layered horizontal	Butt edge (at road) to weak diffuse edges	n/a
Color	Browns, tans, reds	Greens, tans, yellow	n/a
Texture	Fine to medium gain	Fine grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Thin, vertical
Line	n/a	n/a	Thin, vertical; thin/weak concave (conductors)
Color	n/a	n/a	Dull gray
Texture	n/a	n/a	Uniform repeating medium grain, sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■			■	
	Line				■				■			■	
	Color				■				■			■	
	Texture				■				■			■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

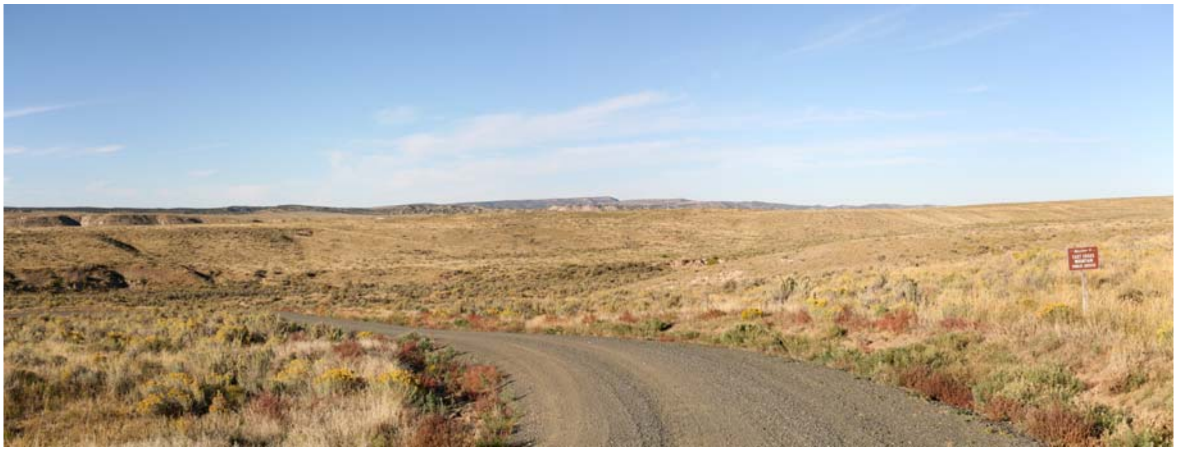
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



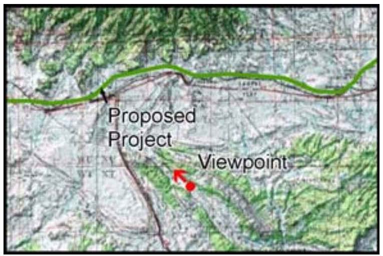
View northeast from the East Cross Mountain/Yampa River access road, Colorado

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape with VRM Class III designation and associated with access to the Yampa River and Cross Mountain Gorge. The proposed Project would be viewed from a level position as it traverses through rolling terrain in a partially backdropped condition. Disturbance associated with construction access and tower pads as well as right-of-way vegetation clearing would not be visible from this viewpoint. The proposed structures and conductors would be seen along the horizon at 2.5 miles away and due to the distance from this viewpoint, would produce a weak structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 23S	Location Sketch
Key Observation Point **#** 301 Arches National Park (Salt Valley Road)	Range: 20E	
VRM Class/VQO: III	Section: 14	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Flat, smooth BG: Bold and rectangular	FG: Short and uniform BG: Scattered and diffuse	n/a
Line	FG: Horizontal BG: Horizontal banding, angular	FG: Indistinct, weak BG: Angular, broken, diffuse edges	n/a
Color	FG: Reds BG: Reds, tans	FG: Tans grasses, green shrubs Gray-greens, dull	n/a
Texture	FG: Smooth BG: Moderate to rough textures	FG: Even, medium grain BG: Rough textured scattered	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	n/a
Line	n/a	n/a	n/a
Color	n/a	n/a	n/a
Texture	n/a	n/a	n/a

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				▨				▨				▨
	Line				▨				▨				▨
	Color				▨				▨				▨
	Texture				▨				▨				▨

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

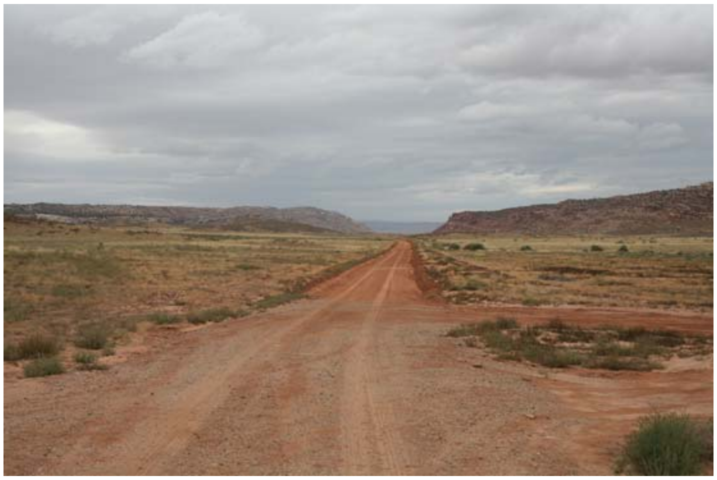
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



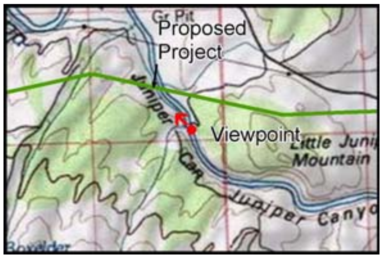
View northwest from Salt Valley Road (access to Arches National Park), Utah

Due to the distant view, over 13 miles from the proposed Project and topographic screening, views from the Salt Valley portion of Arches National Park would have no perceivable contrast produced by the construction and operation of the proposed project.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/14/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 6N	Location Sketch
Key Observation Point # 302 Yampa River (Juniper Canyon)	Range: 95W	
VRM Class/VQO: III	Section: 12	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold meandering band, rugged/blocky, V-shaped	Amorphous patch, strips, stippled	Vertical; complex geometric/triangular
Line	Curving, angular, jagged, diagonal, horizontal	Weak, indistinct	Vertical/diagonal; thin concave (conductors)
Color	Tans, browns, blue, reflective	Greens, yellow, tan	Gray, transparent
Texture	Medium to coarse grain to smooth	Medium grain	Medium to coarse grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Tans, browns	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			■				■		■			
Line			■				■			■		
Color			■				■				■	
Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

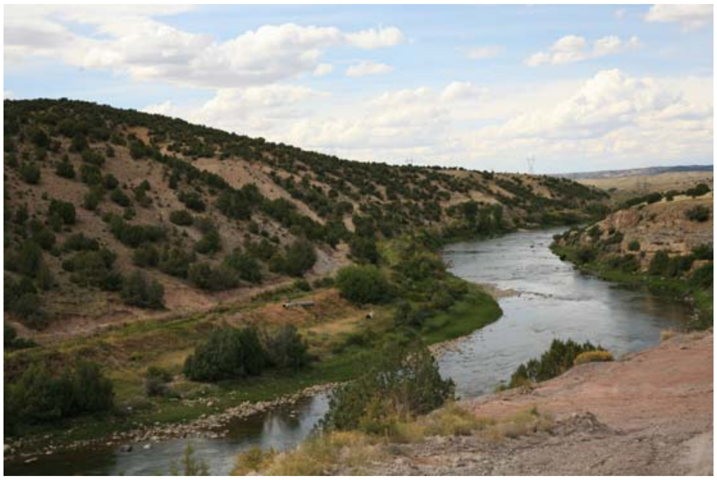
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/14/2011
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



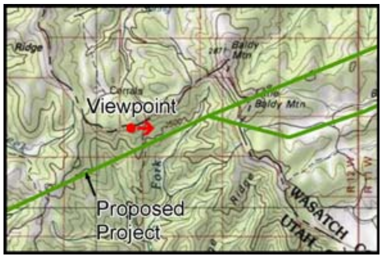
View northwest from Juniper Canyon, Colorado

Moderate contrast would result from the construction and operation of the proposed Project within a feature landscape setting with VRM Class III designation and associated with the Yampa River. The proposed Project would be viewed from a level position as it traverses rolling terrain in a skylined condition similar to the adjacent transmission lines. Disturbance associated with construction access and tower pads as well as right-of-way vegetation clearing would be mostly screened from this viewpoint but where visible, would introduce weak geometric forms. Moderate/strong structure contrast would occur where the structures would be skylined at the crossing of the river. Existing transmission lines of similar size and scale would be seen behind the proposed Project. To reduce contrast, selective mitigation measure #9 (maximize span length) would be applied to reduce the visual dominance of the proposed structures as viewed from the river and therefore, bring the proposed Project into compliance with a VRM Class III objective.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 9S	Location Sketch
Key Observation Point **#** 304 Sheep Creek Road (FR 042)	Range: 6E	
VRM Class/VQO: Partial Retention	Section: 15	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, prominent, rugged	Geometric and amorphous patches, stippled in areas	Vertical, rhythmic; complex geometric/triangular
Line	Diagonal, undulating, bold	Irregular and regular butt edges, diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Subtle, tans, grays	Dark green, grays (trees), light green and tans (grasses)	Gray, transparent
Texture	Medium to coarse grain	Medium to coarse grain	Repeating coarse to medium grain and density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, rhythmic; complex geometric/triangular
Line	Curvilinear, geometric	Bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, grays	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form	■					■				■		
Elements: Line		■				■					■	
Elements: Color		■					■				■	
Elements: Texture	■						■				■	

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

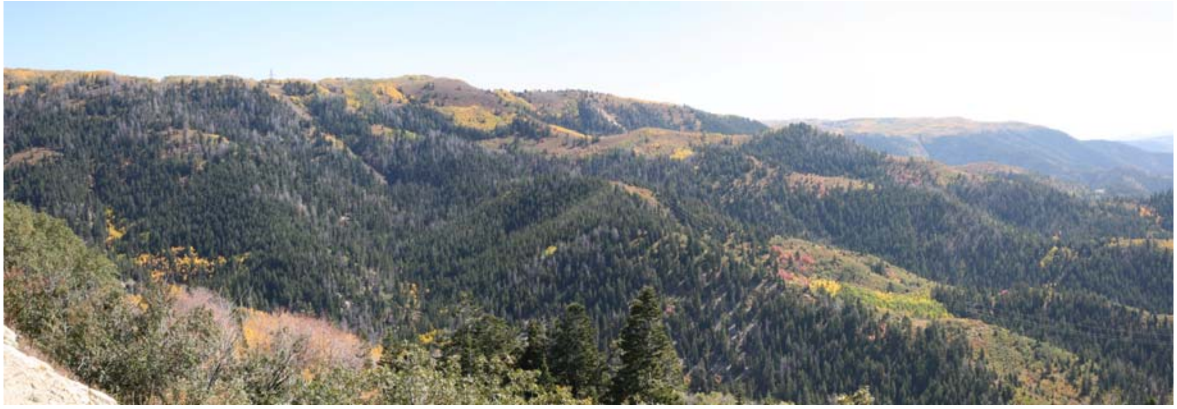
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/30/2011
BLM Field Office/National Forest:	Uinta National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



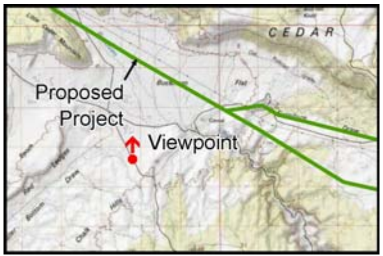
View east from Sheep Creek Road in the Uinta National Forest, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated by the Uinta-Wasatch-Cache National Forest as a partial retention VQO as viewed from Sheep Creek Road. The proposed Project crosses steep terrain and would be backdropped by terrain except for the structures located along the top of the ridge. Disturbance associated with construction access would introduce curvilinear lines and geometric forms that would contrast with existing landform patterns. Vegetation clearing in the right-of-way would produce additional geometric forms consistent with the adjacent transmission line corridor. The proposed structures would be seen at approximately 0.5 mile in context with an existing 345kV transmission line. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast produced by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 19S	Location Sketch
Key Observation Point # 305 Wedge Overlook Scenic Backway	Range: 10E	
VRM Class/VQO: III	Section: 22	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, Cedar Mountain prominent in background	Short, patchy	Thin, vertical
Line	Horizontal	Angular, broken, diffuse edges	Vertical
Color	Tans, beiges	Gray-greens, dull	Brown
Texture	Fine grain	Even, medium grain	Uniform repeating fine grain, medium to sparse density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin/weak concave (conductors)
Color	Tans, beiges	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform repeating, medium grain, medium to sparse density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨			▨		
	Line			▨				▨				▨	
	Color			▨				▨				▨	
	Texture			▨				▨			▨		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

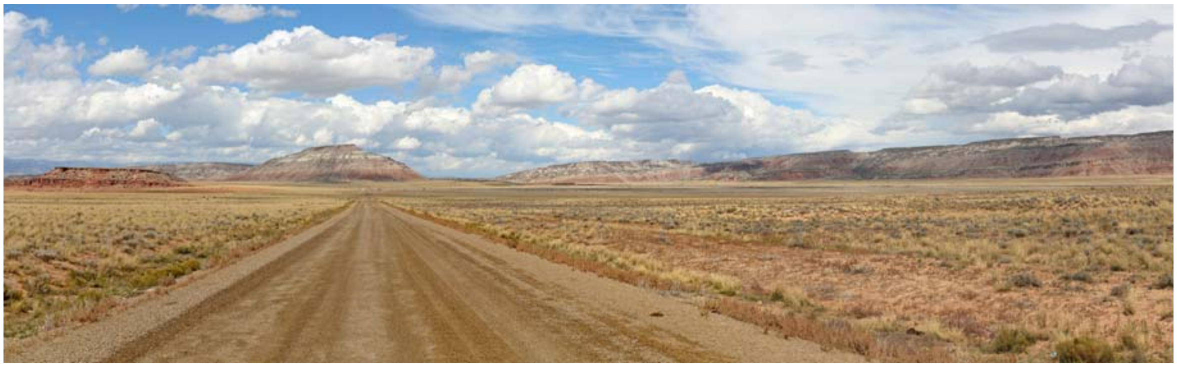
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from Wedge Overlook Scenic Backway, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape designated as VRM Class III as viewed from the Wedge Overlook Scenic Backway. The proposed Project crosses flat terrain and would be mostly backdropped by the adjacent terrain. Disturbance associated with construction access would introduce a horizontal line and geometric forms into the landscape. Vegetation clearing would be limited to tower pads and access roads, which would introduce additional geometric forms contrasting with existing vegetation patterns. The proposed structures would be seen approximately 2 miles away adjacent to an existing 345kV transmission line, therefore, a weak/moderate structure contrast would be produced by the proposed Project.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

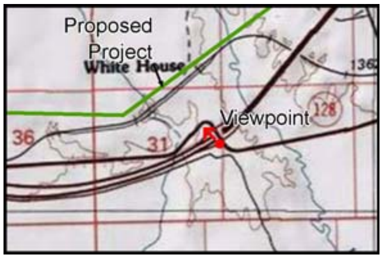
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
306 Upper Colorado River Scenic Byway

VRM Class/VQO:
II

Location:
Township: 21S
Range: 23E
Section: 32

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, Book Cliffs prominent in background	Short, patchy	n/a
Line	Horizontal, elevated railroad line	Angular, broken, diffuse edges	n/a
Color	Tans, beiges, grays	Tans, gray-greens, dull	n/a
Texture	Fine grain	Even, medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■				■	
	Color			■				■				■	
	Texture			■				■				■	

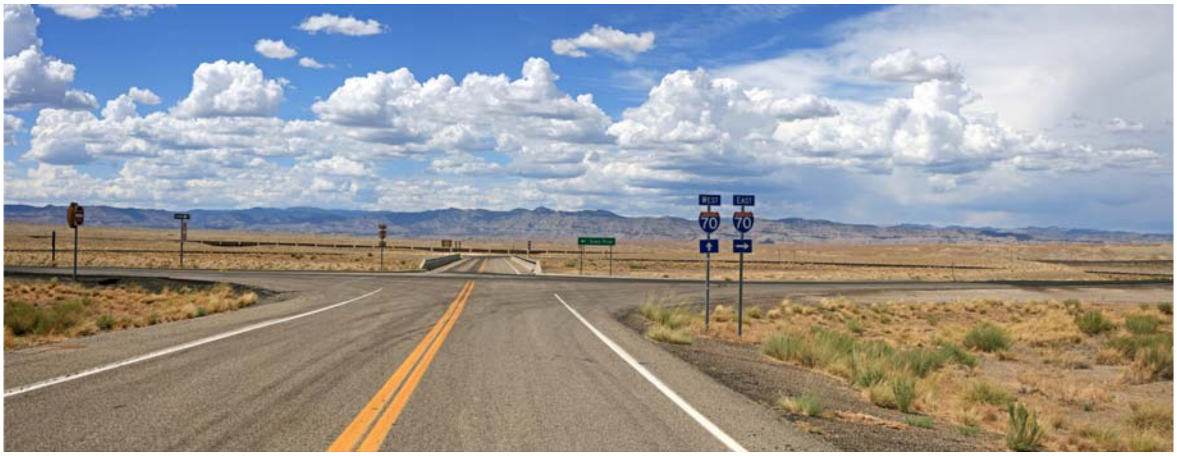
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from Upper Colorado River Scenic Byway west of Cisco, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class II and viewed from the intersection of the Upper Colorado River Scenic Byway and Interstate 70. The proposed Project traverses level terrain and would be backdropped by the distant Book Cliffs landscape. Disturbance associated with construction access and vegetation clearing in the right-of-way would be mostly screened by the elevated railroad line but where visible, would introduce weak geometric forms into the landscape. The proposed structures would be seen at 0.6 mile from a level viewing position in context with an interstate highway and railroad line which have modified the local landscape character.

Note: The Moab Field Office manages VRM Class II areas within designated utility corridors as VRM Class III for utility projects as stated in their 2008 RMP.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2012
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

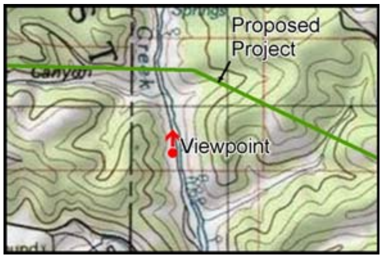
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
307 Energy Loop Scenic Byway

VRM Class/VQO:
Partial Retention

Location:
Township: 13S
Range: 6E
Section: 27

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous, angular	Flowing, complex, irregular, butt edge in background (right-of-way	n/a
Color	Tans	Vivid, tans, greens, gray-green	n/a
Texture	Medium grain	Coarse, stippled, scattered	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric	Bold, vertical; complex geometric/triangular
Line	Curvilinear, horizontal	Horizontal, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form	■				■				■			
Elements: Line	■					■			■			
Elements: Color		■				■			■			
Elements: Texture	■				■				■			

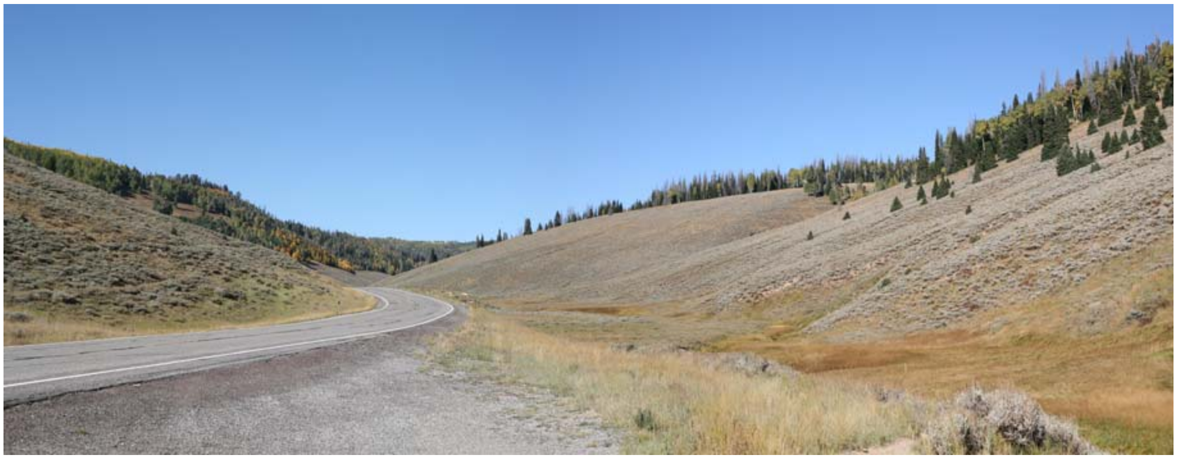
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2012
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View north from Energy Loop Scenic Byway (Utah State Route 264), Utah

Strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated by the Manti-La Sal National Forest as a partial retention VQO. The proposed Project crosses steep terrain and would be skylined along the top of adjacent ridgelines. Disturbance associated with the construction of access and tower pads would introduce curvilinear lines and geometric forms into the landscape. Vegetation clearing in the right-of-way would produce a geometric form with a butt edge against existing vegetation. The proposed structures would be seen at approximately 0.5 mile and would dominate views from the Energy Loop Scenic Byway. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast generated by the proposed Project. By maximizing the span length between towers across this scenic road (selective mitigation measure #9), structure contrast would be reduced by limiting the visual dominance of transmission structures being located adjacent to the road.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name:
Energy Gateway South Transmission Project

Key Observation Point
308 Millers Flat Road

VRM Class/VQO:
Modification

Location:
Township: 16S
Range: 6E
Section: 16

Location Sketch

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, diagonal, bold	Vertical, complex, pyramidal, amorphous	Vertical, geometric, transparent
Line	Curving, continuous	Butt edge, flowing, complex, irregular	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays	Vivid, greens, tans, seasonal variation	Brown, gray, transparent
Texture	Medium grain	Medium to coarse grain, dense	Uniform medium grain, medium density,

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, thin; geometric, triangular
Line	Curvilinear, geometric	Horizontal, bold, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans, grays	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form		▨				▨				▨		
Line			▨				▨			▨		
Color			▨			▨				▨		
Texture		▨				▨					▨	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

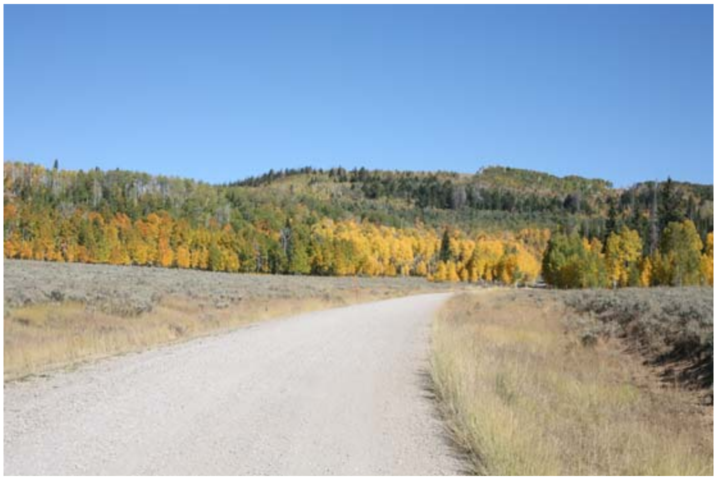
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/27/2011
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



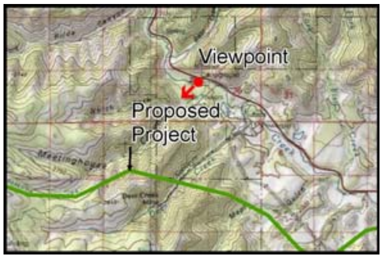
View north from Millers Flat Road, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a partially enclosed landscape setting designated by the Manti-La Sal National Forest as a modification VQO viewed from Miller Flat Road. The proposed Project crosses moderately steep terrain and would be partially skylined across the hill north of the viewpoint. Disturbance associated with construction access would introduce geometric forms and curvilinear lines not visible in the existing transmission line corridor. Right-of-way vegetation clearing associated with the proposed Project would be approximately twice as wide as the existing transmission line right-of-way. Due to this additional width, a more defined geometric form would be produced by the proposed Project. The proposed structures would be seen 0.8 mile away from an inferior viewing position in context with an existing 345kV transmission line. Application of selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce landscape contrast produced by access road construction and right-of-way vegetation clearing.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 16S	Location Sketch
Key Observation Point # 309 Bear Creek Campground	Range: 7E	
VRM Class/VQO: Partial Retention	Section: 35	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, dissected, ridges	Amorphous, stippled areas	Vertical, rhythmic; geometric/triangular
Line	Complex, diagonal, horizontal banding	Butt and diffuse edges	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans, grays	Light and dark greens, tans	Brown, reflective gray
Texture	Medium to coarse grain	Medium to coarse grain	Repeating fine to medium grain, medium density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Diagonal, butt edge	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans, grays	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating fine grain, sparse density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■				■		
	Line		■				■					■	
	Color			■				■				■	
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

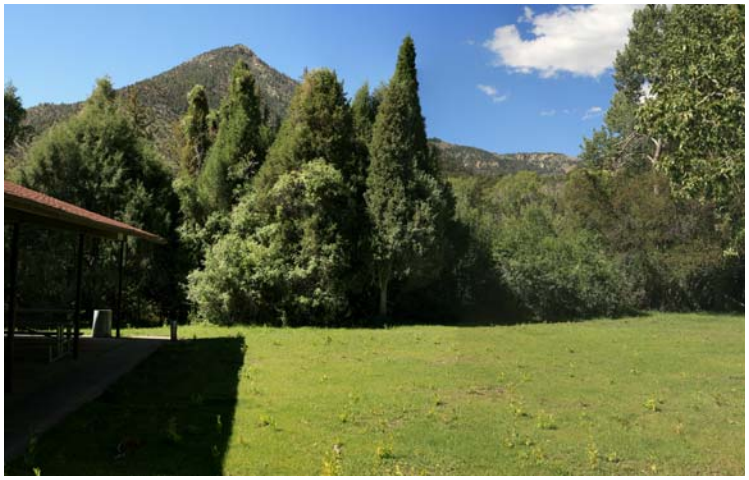
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/26/2012
BLM Field Office/National Forest:	Manti-La Sal National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from the Bear Creek Campground, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a partially enclosed landscape setting designated by the Manti-La Sal National Forest as a partial retention VQO viewed from the Bear Creek Campground. The proposed Project crosses steep terrain and would be skylined on the distant ridgeline. Disturbance associated with construction access would produce geometric forms and curvilinear lines that would contrast with the existing landscape character. Vegetation clearing in the right-of-way would develop geometric forms that would be incongruent with the existing vegetative patterns. The proposed structures would be seen at approximately 2 miles from an inferior viewing position in context with existing transmission lines (which are screened from this viewing position but are visible at various locations within the campground).

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

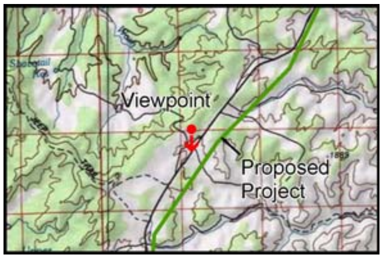
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
310 Crooks Brand Rock Art Site

VRM Class/VQO:
IV

Location:
Township: 1S
Range: 102W
Section: 8

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, rounded	Amorphous patches	Cylindrical
Line	Continuous, horizontal	Diffuse to butt edges from juniper stands	Vertical
Color	Browns, tans	Light tan (grasses), dark green (juniper)	Tans
Texture	Fine to medium grain	Fine to patchy, coarse	Fine grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Butt edge, broken, regular	Vertical/diagonal; thin concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■			■			■			
	Line			■				■			■		
	Color			■				■		■			
	Texture			■				■		■			

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

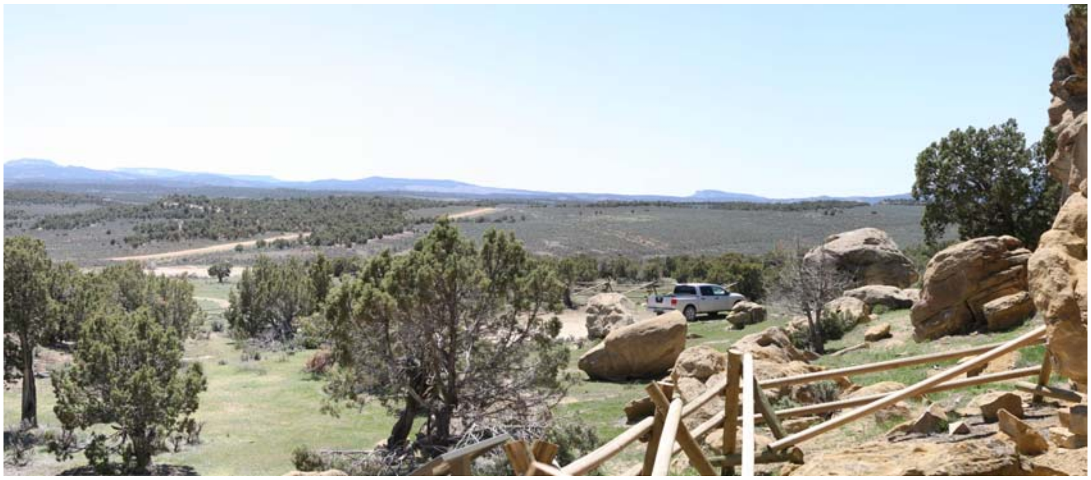
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	White River Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Crooks Band Rock Art Site

Moderate to moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class IV as viewed from the Crook's Brand Rock Art Site. The proposed Project crosses gently rolling terrain and would be mostly backdropped by adjacent terrain. Disturbance associated with construction access would introduce curvilinear forms consistent with the existing landscape character. Vegetation clearing in the right-of-way would produce geometric forms with butt edges through existing amorphous patches of pinyon-juniper. The proposed structures would be seen at approximately 0.4 mile from a level viewing position.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name:
Energy Gateway South Transmission Project

Key Observation Point
312 Rabbit Valley Dispersed Campsite

VRM Class/VQO:
IV

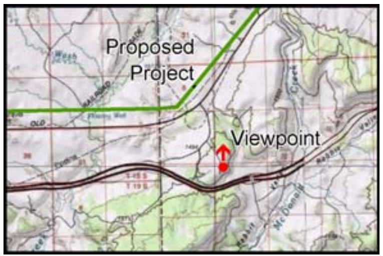
Location:

Township: 10S

Range: 104W

Section: 17

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow slopes, undulating	Indistinct, patches, stippled	n/a
Line	Horizontal, broken diagonal	Indistinct	n/a
Color	Tans	Tans, gray greens, dark greens	n/a
Texture	Fine to medium grain	Medium grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

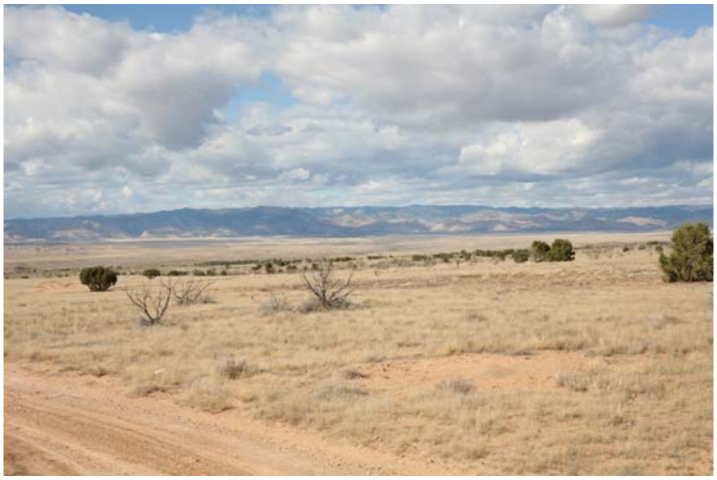
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/11/2011
BLM Field Office/National Forest:	Grand Junction Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from a dispersed campsite in Rabbit Valley (McInnis Canyons NCA), Colorado

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class IV as viewed from a dispersed recreation site adjacent to Rabbit Valley in the McInnis Canyons National Conservation Area. The proposed Project crosses rolling terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access would introduce geometric forms and curvilinear lines into the landscape. Due to the low-growing existing vegetation, clearing would be limited to geometric forms as a result of the construction of access roads and tower pads. The proposed structures would be seen 1.4 miles away from a slightly superior viewing position and would produce a moderate level of structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

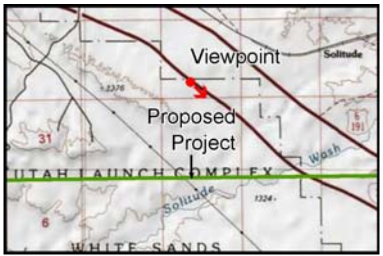
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 313 Interstate 70 crossing

VRM Class/VQO:
III

Location:
Township: 21S
Range: 17E
Section: 28

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling, horizontal, plateaus	Few, stippled	n/a
Line	Horizontal, curving, diagonal, angular	Weak diffuse, indistinct	n/a
Color	Tans, grays, reds	Tans, greens	n/a
Texture	Medium to course grain	Fine grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; weak concave (conductors)
Color	Tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating medium grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■			■		
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

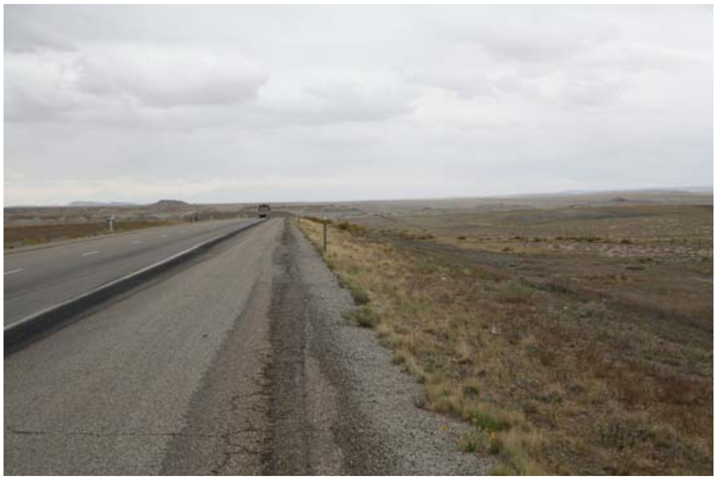
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southeast from Interstate 70 east of Green River, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III viewed from Interstate 70. The proposed Project crosses flat to gently rolling terrain and would be mostly backdropped by adjacent terrain. Disturbance associated with construction access would weakly introduce curvilinear lines and geometric forms into the landscape. Due to the presence of low-growing vegetation within the right-of-way, vegetation clearing would be mostly limited to tower pads and access roads where geometric forms would produce a weak landscape contrast. The proposed structures would be seen at approximately 1.5 miles from a slightly superior viewer position.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

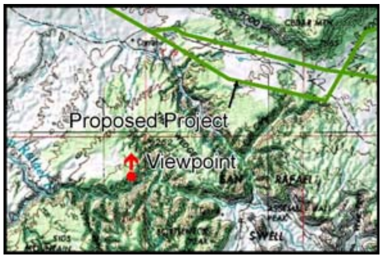
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
314 Little Grand Canyon Overlook

VRM Class/VQO:
III

Location:
Township: 20S
Range: 10E
Section: 12

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, Cedar Mountain prominent in background	Short, patchy, stippled	Thin, vertical
Line	Horizontal, angular	Angular, broken, diffuse edges	Thin Vertical
Color	Tans, reds, beiges	Dark greens, gray-greens	Brown
Texture	Fine grain	Even, medium grain	Fine grain, medium density, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Thin, vertical
Line	Curvilinear, geometric	Indistinct, broken, regular	Thin vertical
Color	Tans, beiges	Sage greens, tans	Dull gray
Texture	Fine grain	Fine grain	Uniform repeating medium to fine grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			▨				▨				▨	
Line			▨				▨				▨	
Color			▨				▨				▨	
Texture			▨				▨				▨	

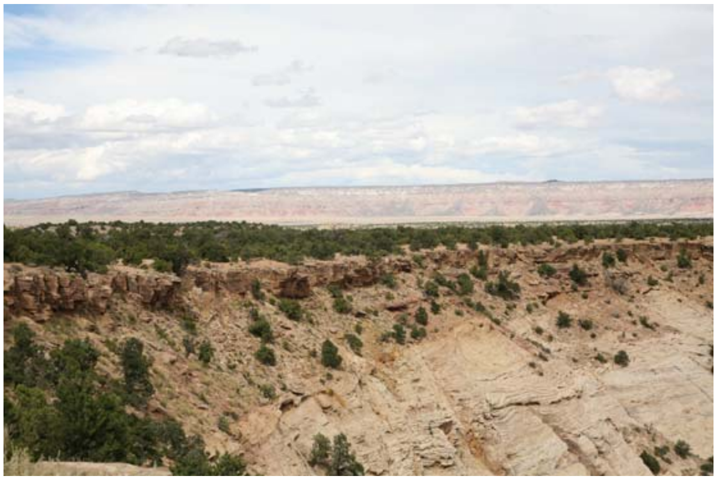
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from Little Grand Canyon Overlook, Utah

Weak contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III viewed from the Little Grand Canyon Overlook. The proposed Project crosses flat to gently rolling terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access and vegetation clearing within the right-of-way, if perceivable, would weakly introduce curvilinear lines and geometric forms consistent with those associated with the existing transmission line. The proposed structures would be seen over 5 miles away from a level viewing position in context with an existing 345kV transmission line. Due to the distance from the viewpoint to the proposed Project, structure contrast was assessed to be weak.

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Ashley National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

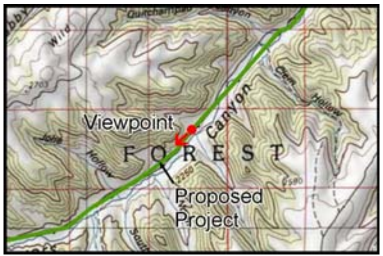
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
315 Sowers Canyon Road

VRM Class/VQO:
Modification

Location:
Township: 6S
Range: 5W
Section: 8

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	V-shaped, bold, steep, level valley	Numerous, irregular	Vertical, geometric
Line	Diagonal, angular, jagged, horizontal	Butt and diffuse edges	Vertical, horizontal; concave (conductors)
Color	Tans, beiges	Variety of greens, tans, little seasonal variation	Brown
Texture	Medium, granular, fine grain in valley	Random, scattered, fine to medium grain	Repeating medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Bold, vertical, rhythmic; complex geometric/triangular
Line	Geometric, curvilinear	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, beiges	Tans, gray-greens	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Repeating coarse to medium grain and density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			■				■		■			
	Line			■				■			■		
	Color			■				■			■		
	Texture			■				■			■		

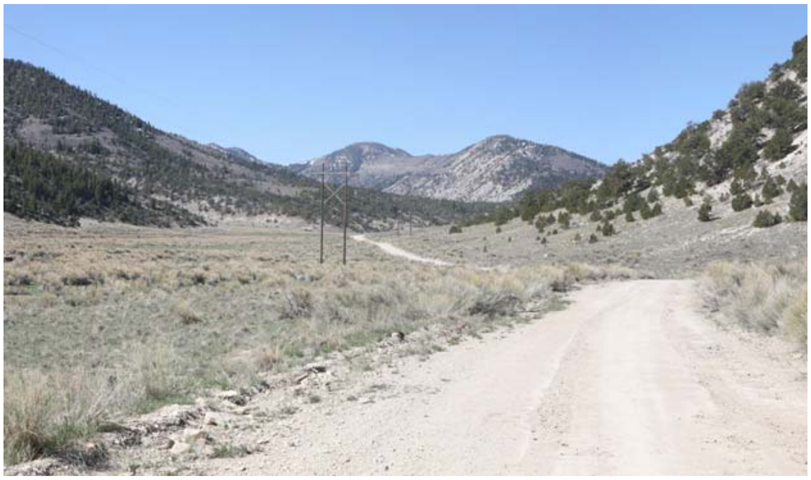
Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	5/2/2013
BLM Field Office/National Forest:	Ashley National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



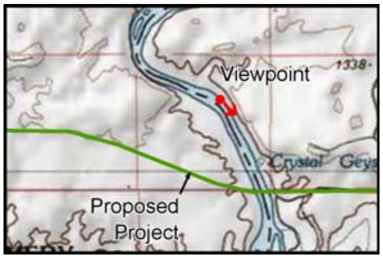
View southwest from Sowers Canyon Road, Utah

Moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated by the Ashley National Forest as a modification VQO viewed from Sowers Canyon Road. The proposed Project crosses flat terrain along the bottom of the canyon and would be backdropped by the canyon walls. Disturbance associated with construction access would introduce geometric and curvilinear elements into the landscape which would weakly contrast with existing features. Due to the low-growing vegetation, right-of-way vegetation clearing would be mostly limited to construction access roads and tower pads which would produce weak geometric forms. The proposed structures would be located directly adjacent to this viewpoint and due to this proximity, would be skylined from a level viewing position.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/24/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 319 Green River	Township: 21S Range: 16E	
VRM Class/VQO: III	Section: 34	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Curving band(river), rolling to level	Continuous strip of riparian vegetation, small stippled beyond	Vertical, geometric
Line	Complex, diagonal, horizontal	Undulating, weak, diffuse edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans, reds, reflective	Variety of greens, browns	Brown
Texture	Rippled to smooth, glossy (river), rough, striated	Fine to medium grain (river corridor), sparse, medium grain	Medium grain, sparse, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical; complex, triangular, geometric
Line	Curvilinear, geometric	Indistinct, broken, regular	Diagonal, horizontal; thin concave (conductors)
Color	Browns, tans, reds	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form			■				■		■			
Elements: Line			■				■			■		
Elements: Color			■				■			■		
Elements: Texture			■				■			■		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

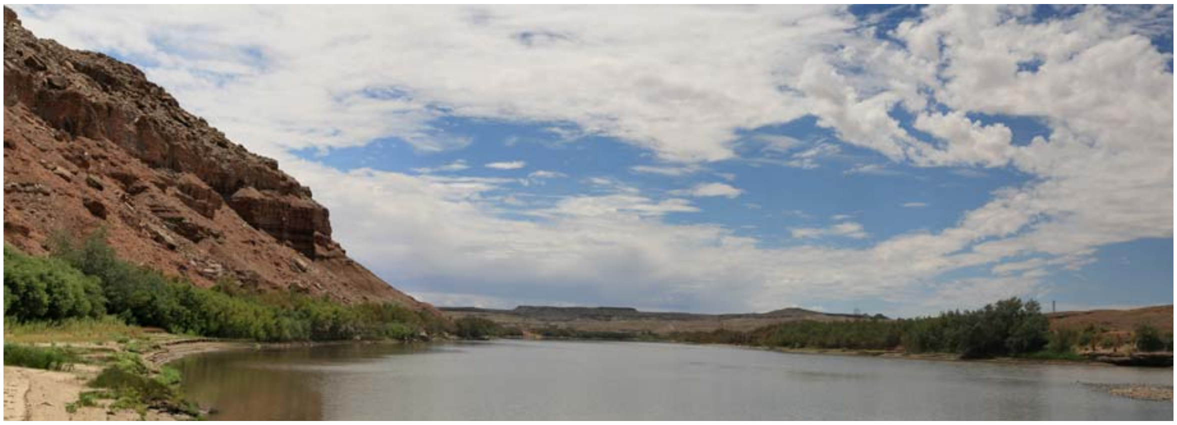
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/24/2012
BLM Field Office/National Forest:	Moab Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



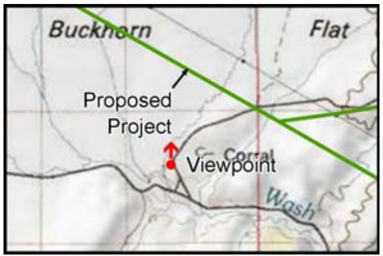
View southeast from the Green River north of Crystal Geyser, Utah

Moderate contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting with views toward VRM Class III lands from the Green River. The proposed Project would traverse rolling terrain and would be partially skylined on the west side of the river and mostly screened on the east side. Disturbance associated with construction access and vegetation clearing in the right-of-way would be mostly screened by topography. In locations where these disturbances would be visible, they would introduce weak geometric forms and curvilinear lines into a landscape characterized by rolling terrain and low-growing vegetation. The proposed structures would be seen at approximately 0.75 mile from an inferior viewing position in context with an existing 345kV transmission line. To reduce structure contrast, the towers crossing the river would be placed at their maximum span distance (selective mitigation measure #9) so fewer structures would be visible from this viewpoint.

Note: As stated in the 2008 Moab RMP, VRM Class II lands within the utility corridor are treated as VRM Class III for utility projects.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 320 Junction of Road to Buckhorn Wash	Township: 19S Range: 10E Section: 13	
VRM Class/VQO: III		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat, smooth, Cedar Mountain prominent in background	Short, patchy	Vertical, geometric
Line	Horizontal	Angular, broken, diffuse edges	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, beiges, reds	Gray-greens, dull	Brown
Texture	Fine grain	Even, medium grain	Fine grain, medium density, repeating

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, beiges	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨				▨			▨		
	Line			▨				▨			▨		
	Color			▨				▨			▨		
	Texture			▨				▨			▨		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

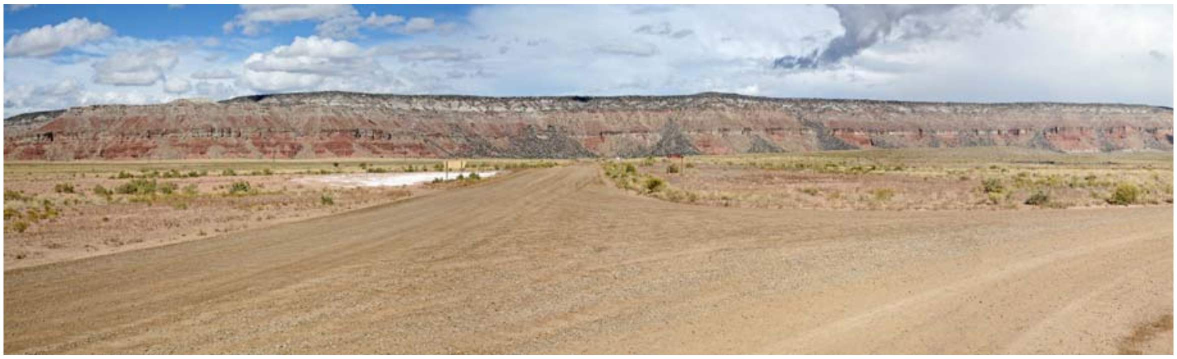
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/4/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View north from Buckhorn Draw Scenic Backway

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III and viewed from the Buckhorn Draw Scenic Backway. The proposed Project crosses flat to gently rolling terrain and would be mostly backdropped by adjacent terrain. Disturbance associated with construction access would introduce geometric forms and curvilinear lines into the landscape, weakly contrasting with existing patterns. Due to the low-growing vegetation present in the right-of-way, vegetation clearing would be mostly limited to tower pads and access roads. The proposed structures would be seen at approximately 0.75 mile and viewed from a level viewing position with an existing 345kV transmission line located beyond the proposed Project. Therefore, structure contrast was assessed to be at a moderate level from this viewpoint.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

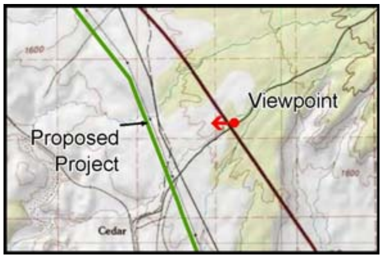
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 322 U.S. Highway 6 Rest Area (Dinosaur Diamond SB)

VRM Class/VQO:
IV

Location:
Township: 16S
Range: 13E
Section: 23

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Shallow to moderate slopes, rolling	Indistinct, amorphous, stippled	Vertical, geometric
Line	Horizontal, diagonal, undulating	Indistinct, regular	Thin vertical, angular, horizontal
Color	Tans	Dark greens, tans	Brown
Texture	Fine to medium grain	Medium grain, grouped	Medium grain, sparse

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Vertical, thin; geometric, triangular
Line	n/a	n/a	Vertical/diagonal; thin concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■		■		
	Line				■				■			■	
	Color				■				■			■	
	Texture				■				■			■	

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

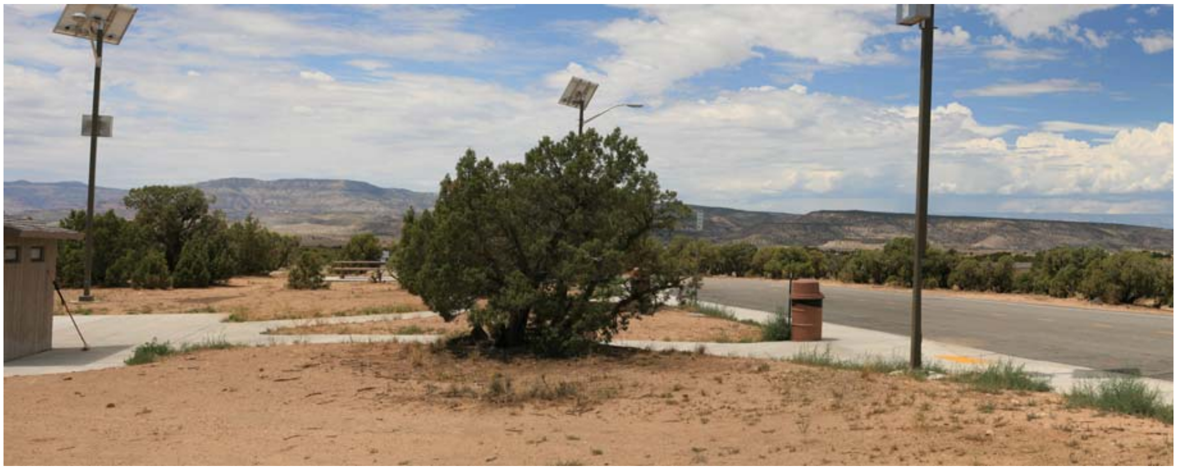
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/5/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



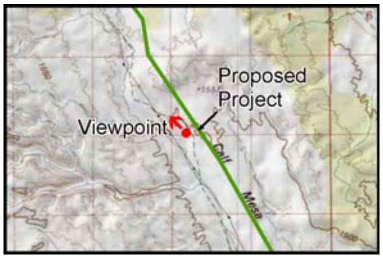
View west from rest area on U.S. Highway 6 south of Wellington, Utah

Weak/moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class IV as viewed from a rest area on U.S. Highway 6. The proposed Project crosses rolling terrain and would be backdropped by adjacent terrain. Disturbance associated with construction access and vegetation clearing in the right-of-way would be screened by topography and vegetation from this KOP. The proposed structures would be seen at approximately 1 mile from a slightly superior viewing position in context with an existing 138kV transmission line which is intermittently screened.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/12/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 323 Old Railroad Grade (adjacent to Mexican Mountain WSA)	Township: 20S Range: 13E	
VRM Class/VQO: III	Section: 11	



Characteristic Landscape Description

	Landform/Water	**Vegetation**	**Structures**
Form	Rugged to level, rolling	Indistinct, patches, stippled	Vertical, geometric, rhythmic
Line	Horizontal, diagonal, angular, undulating	Indistinct	Vertical/diagonal, horizontal; concave (conductors)
Color	Reds, browns, tans, whites	Dark greens, tans	Browns
Texture	Fine to medium grain, striated	Medium grain, uneven random	Repeating medium grain, medium density,

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures**
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Bold, vertical, rhythmic; complex geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, reds, lighter colored soils	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		▨					▨		▨			
	Line		▨					▨			▨		
	Color		▨					▨			▨		
	Texture		▨					▨			▨		

Does project design meet visual resource management objectives?

Yes

Additional mitigating measures recommended?

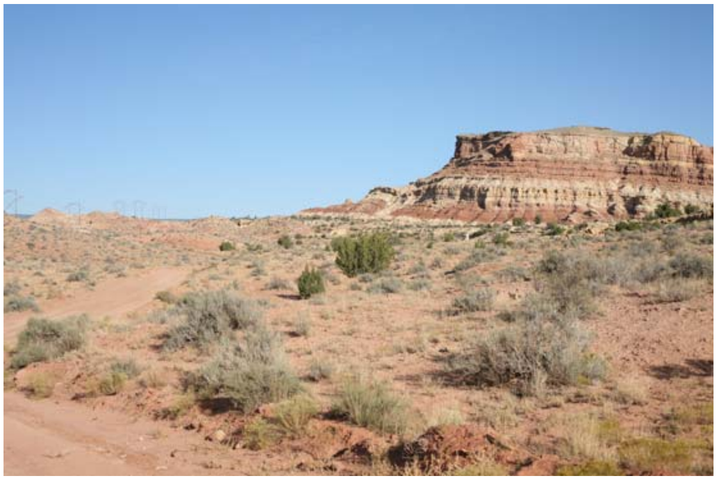
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/12/2011
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View northwest from the Old Railroad Grade adjacent to the Mexican Mountain WSA, Utah

Moderate contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III as viewed from the Old Railroad Grade adjacent to the Mexican Mountain Wilderness Study Area. The proposed Project crosses rolling terrain and would be partially backdropped by the adjacent terrain except where the proposed structures would be located on top of the plateau northwest of the KOP. In this area, the proposed Project would be skylined. Disturbance associated with construction access would introduce dominant curvilinear lines that would expose lighter colored soils on the plateau. Contrast produced by vegetation clearing in the right-of-way would be weak due to the presence of scattered, low-growing vegetation. The proposed structures would be seen at 0.3 mile from a level to inferior viewing position in context with an existing 345kV transmission line. By rerouting the proposed Project off of the plateau (selective mitigation measure #7), the skylined structures would become more backdropped thereby reducing contrast and becoming compliant with VRM Class III. To further reduce contrast, the proposed Project would use the H-frame alternative structure type which would decrease the variety of different transmission structure types viewed in this area.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

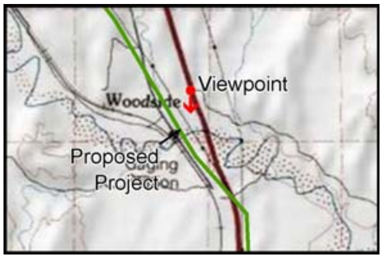
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
# 324 Dinosaur Diamond SB (U.S. HWY 6 N of Woodside)

VRM Class/VQO:
III

Location:
Township: 18S
Range: 14E
Section: 4

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Rolling, smooth BG: Bold, vertical, rugged	FG: Short, patchy BG: Few, stippled	Vertical, geometric
Line	FG: Undulating, angular BG: Horizontal banding, diagonal,	FG: Angular, broken, diffuse edges BG: Weak diffuse, indistinct	Angular, concave, horizontal
Color	FG: Tans, beiges BG: Tans, grays, reds	FG: Gray-greens, brighter greens along riparian corridor	Brown
Texture	FG: Fine grain BG: Banded, medium grain	FG: Random, medium grain BG: Fine to medium grain	Medium grain, dense, matted, uniform, ordered

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Vertical, rhythmic and diminishing; geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans, beiges	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse to medium grain, medium density

Degree of Contrast

Degree of Contrast	Features											
	Landform/ Water Body				Vegetation				Structures			
Elements	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form		■					■		■			
Line			■				■		■			
Color			■				■			■		
Texture			■				■			■		

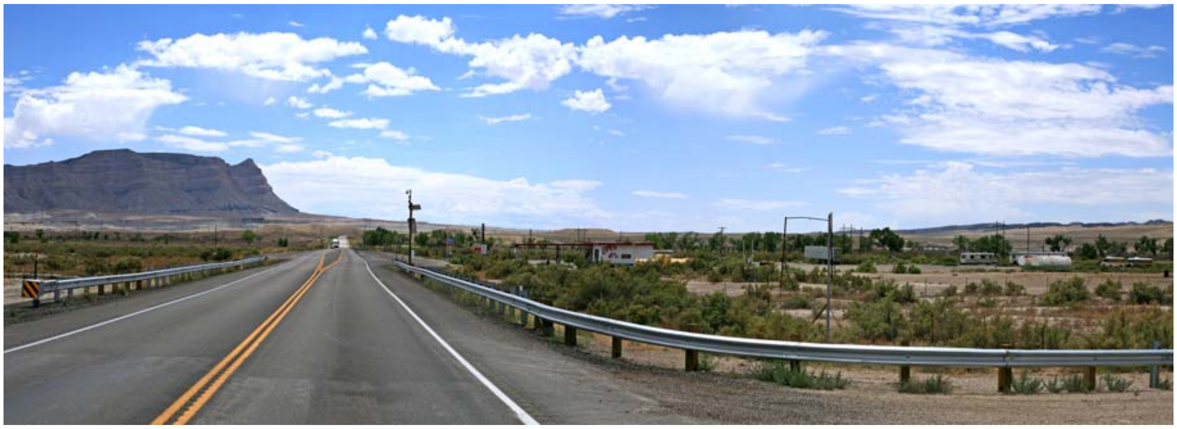
Does project design meet visual resource management objectives?
No

Additional mitigating measures recommended?
No

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Dinosaur Diamond Scenic Byway (U.S. Highway 6) north of Woodside, Utah

Moderate to moderate/strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III as viewed from U.S. Highway 6. The proposed Project crosses rolling terrain and would be partially backdropped by adjacent terrain as it parallels the scenic highway. Disturbance associated with construction access would introduce curvilinear lines and geometric forms into the landscape. Due to the low-growing vegetation, right-of-way vegetation clearing would be mostly limited to tower pads and access roads. Therefore, the geometric shapes produced by vegetation clearing would weakly contrast with existing vegetation patterns. The proposed structures would be seen 0.7 mile away from a slightly superior viewing position in context with an existing 138kV transmission line.

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

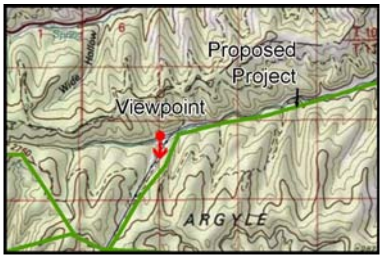
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
325 Argyle Canyon Residences

VRM Class/VQO:
n/a

Location:
Township: 11S
Range: 11E
Section: 9

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rounded, moderate slope	Numerous, irregular	Vertical, geometric
Line	Curving, undulating, angular	Broken, flowing, vertical, angular	Vertical, horizontal, concave (conductors)
Color	Tans	Variety of greens, tans, seasonal variation	Browns
Texture	Medium grain	Random, scattered, medium to coarse grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical, rhythmic and diminishing; complex
Line	Curvilinear, geometric	Angular, bold, butt edge	Vertical/diagonal, horizontal; concave (conductors)
Color	Tans and grays	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating/diminishing coarse grain and density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■			■				■			
	Line			■			■			■			
	Color			■			■			■			
	Texture		■				■			■			

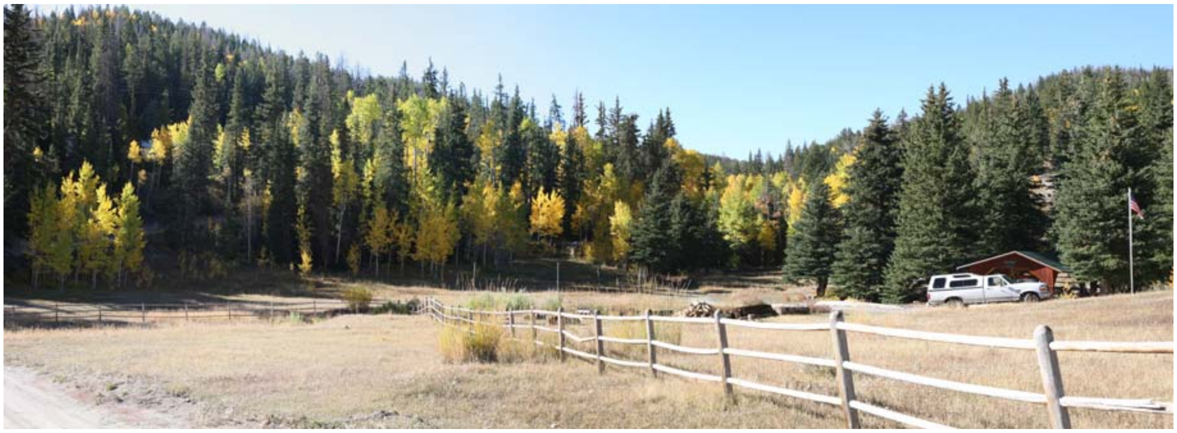
Does project design meet visual resource management objectives?
n/a

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	9/28/2012
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from residences in Argyle Canyon, Utah

Strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting viewed from residences in Argyle Canyon. The proposed Project would cross moderately steep slopes adjacent to an existing 138kV transmission line but since the proposed Project would be skylined on the ridgeline, it would dominate views from these residences. Due to the presence of tall vegetation in the right-of-way, vegetation would be removed across the entire 250-foot wide right-of-way introducing a geometric form which is incongruent with existing vegetation patterns as views of the existing transmission line right-of-way are mostly screened from view. The construction of access roads and tower pads would produce curvilinear lines and geometric forms which would contrast with the existing landforms. The proposed structures would be seen 0.2 mile away and would introduce strong contrast into the landscape since the existing 138kV transmission line is mostly screened from view at this location. Selective mitigation measures #3 (minimize cut and fill) and #4 (minimize tree clearing) would be applied to reduce contrast. To further reduce contrast, the proposed structure type would be modified to use the shorter, H-frame alternative structure type to utilize vegetation screening to the extent practicable.

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name:
Energy Gateway South Transmission Project

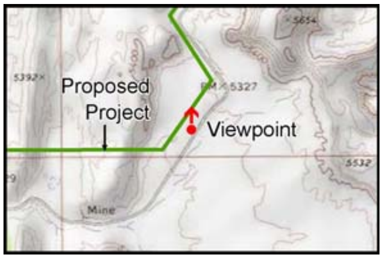
Key Observation Point
# 326 San Rafael Swell Destination Route

VRM Class/VQO:
III

Location:

Township:	19S
Range:	10E
Section:	13

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rugged, rolling, geometric	Indistinct, patches, stippled	n/a
Line	Horizontal, diagonal, angular, undulating	Indistinct	n/a
Color	Reds, browns, tans	Tans, dark greens	n/a
Texture	Fine to medium grain, striated	Fine to medium grain, uneven random	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Low, rectangular clearings (tower pads)	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Indistinct, broken, regular	Vertical/diagonal, horizontal; concave (conductors)
Color	Browns, tans	Sage greens, tans	Dull gray, transparent
Texture	Fine grain	Fine grain	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		▨					▨		▨			
	Line			▨				▨		▨			
	Color			▨				▨		▨			
	Texture			▨				▨		▨			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

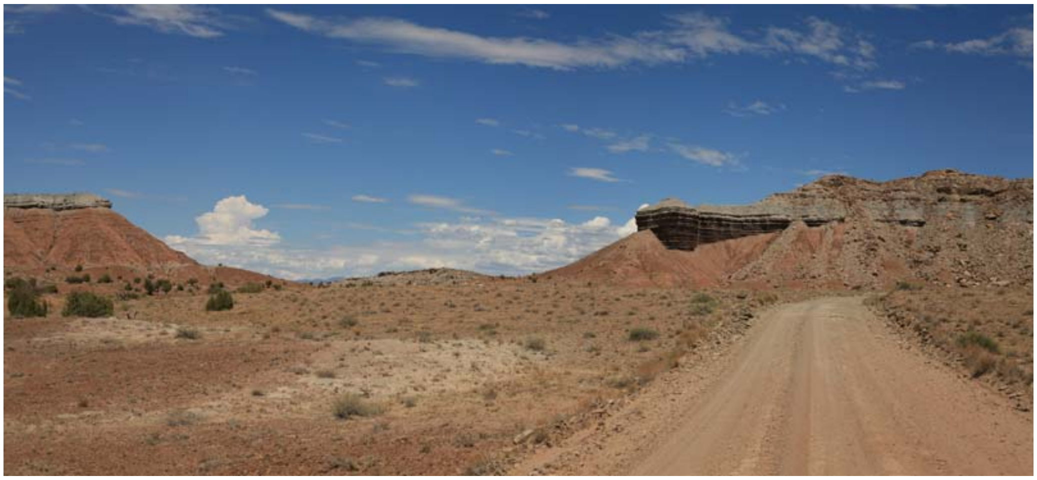
No

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	7/23/2012
BLM Field Office/National Forest:	Price Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



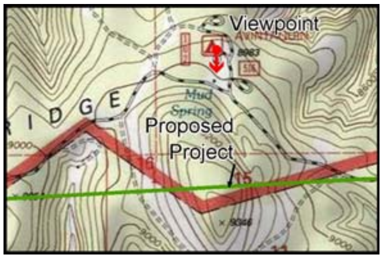
View north from Green River Cutoff Road (San Rafael Swell Destination Route), Utah

Strong contrast would result from the construction and operation of the proposed Project within an enclosed landscape setting designated as VRM Class III and viewed from the Green River Cutoff Road which provides access into the San Rafael Swell from U.S. Highway 6. The proposed Project would be seen from a level view with structures and conductors skylined as it crosses through relatively flat terrain. Disturbance associated with construction access and tower pads would weakly contrast with existing landform characteristics. Contrast produced by vegetation clearing in the right-of-way was assessed to be weak due to the scattered, low-growing vegetation which would be modified minimally by the proposed Project. The proposed structures would be seen directly adjacent to the road and therefore, the skylined structures would dominate views from this road.

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Ashley National Forest
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 7S	Location Sketch
Key Observation Point # 327 Avintaquin Campground	Range: 8W	
VRM Class/VQO: Retention	Section: 10	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, rounded	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous	Flowing, complex, irregular	n/a
Color	Tans, grays	Vivid, greens, tans, seasonal variation	n/a
Texture	Medium grain	Coarse grain, dense	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	n/a	n/a	Bold, vertical; complex geometric/triangular
Line	n/a	n/a	Vertical/diagonal, horizontal; concave (conductors)
Color	n/a	n/a	Dull gray, transparent
Texture	n/a	n/a	Repeating coarse to medium grain and density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				■				■	■			
	Line				■				■	■			
	Color				■				■	■			
	Texture				■				■	■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

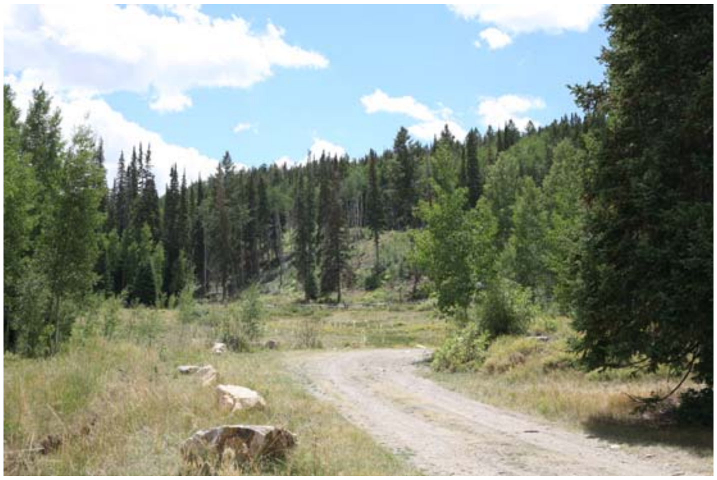
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Ashley National Forest
Resource Area:	
Activity (program):	500kV Transmission Project



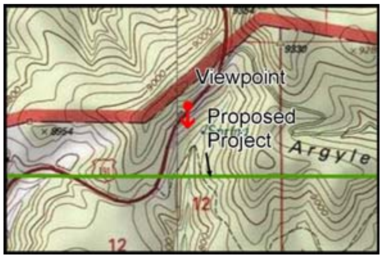
View south from Avintaquin Campground, Utah

Strong contrast would result from the construction and operation of the proposed Project in an enclosed landscape setting viewed from the Avintaquin Campground within lands designated by the Ashley National Forest as a retention VQO. The proposed Project would cross steep terrain as it traverses Reservation Ridge between the Reservation Ridge Scenic Backway and extremely steep terrain south of this ridge. Disturbance associated with construction access and right-of-way vegetation clearing would be screened by topography and vegetation and therefore, disturbance to these features would not be visible from this KOP. The proposed structures would be seen from 0.4 mile away and would be skylined above the trees on one of the domed peaks common along Reservation Ridge. By relocating the proposed Project behind the domed peak visible in this photograph, through the application of selective mitigation measure #7, the dominance of the transmission structures would be reduced through partial to complete landscape screening afforded by this topographic feature.

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 11S	Location Sketch
Key Observation Point # 328 Indian Canyon Scenic Byway (U.S. Highway 191)	Range: 10E	
VRM Class/VQO: n/a	Section: 12	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, bold, rounded, level	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous, angular, horizontal	Flowing, complex, irregular	n/a
Color	Tans, grays	Vivid, greens, tans, seasonal variation, grays	n/a
Texture	Medium to coarse grain	Coarse, dense	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■				■			■			
Elements: Line			■			■			■			
Elements: Color			■				■		■			
Elements: Texture			■				■		■			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

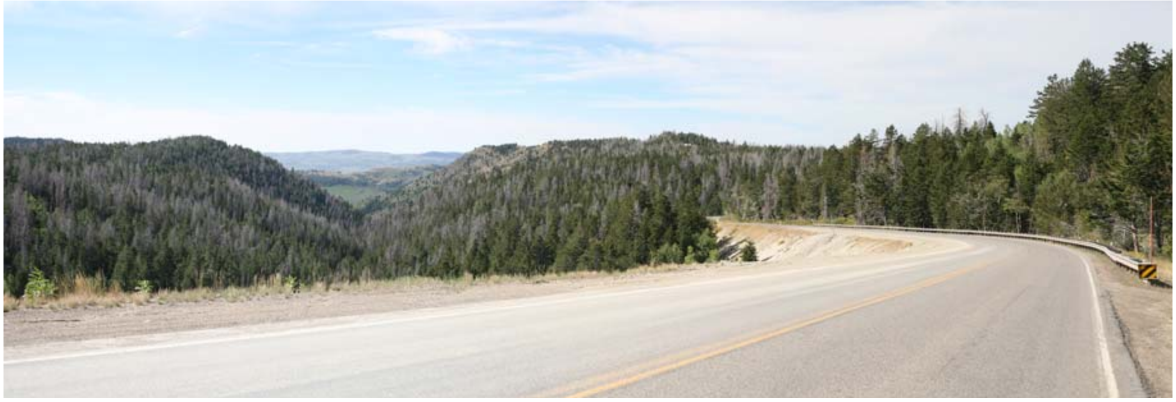
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



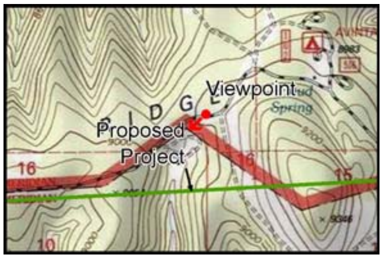
View south from U.S. Highway 191, Utah

Moderate/strong contrast would result from the construction and operation of the proposed Project in a panoramic landscape setting as viewed from U.S. Highway 191 (designated as both the Dinosaur Diamond Scenic Byway and Indian Canyon Scenic Byway). The proposed Project would traverse steep terrain located between Reservation and Argyle ridges as it crosses this designated scenic road. Disturbance associated with the construction of access road and vegetation clearing in the right-of-way would be mostly screened by vegetation except for views perpendicular to U.S. Highway 191 toward the east, which is not the common viewing direction along the highway. In this area, these disturbances would introduce geometric forms and curvilinear lines incongruent with the existing landscape character. The proposed structures would be seen at approximately 0.2 mile from a level viewer position and would introduce a strong level of structure contrast. To reduce contrast on views to the east, selective mitigation measure #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would be applied.

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 329 Reservation Ridge Scenic Backway	Township: 7S Range: 8W	
VRM Class/VQO: III	Section: 9	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Diagonal, rounded, undulating	Vertical, complex, pyramidal, amorphous	n/a
Line	Curving, continuous	Flowing, complex, irregular	n/a
Color	Tans, grays	Vivid, variety of green, white, tans, seasonal variation, grays	n/a
Texture	Medium to coarse grain	Dense, fine (understory) to coarse (overstory) grain	n/a

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Curvilinear, geometric	Angular, bold, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■			■				■			
	Line		■			■				■			
	Color		■				■			■			
	Texture		■				■			■			

Does project design meet visual resource management objectives?

No

Additional mitigating measures recommended?

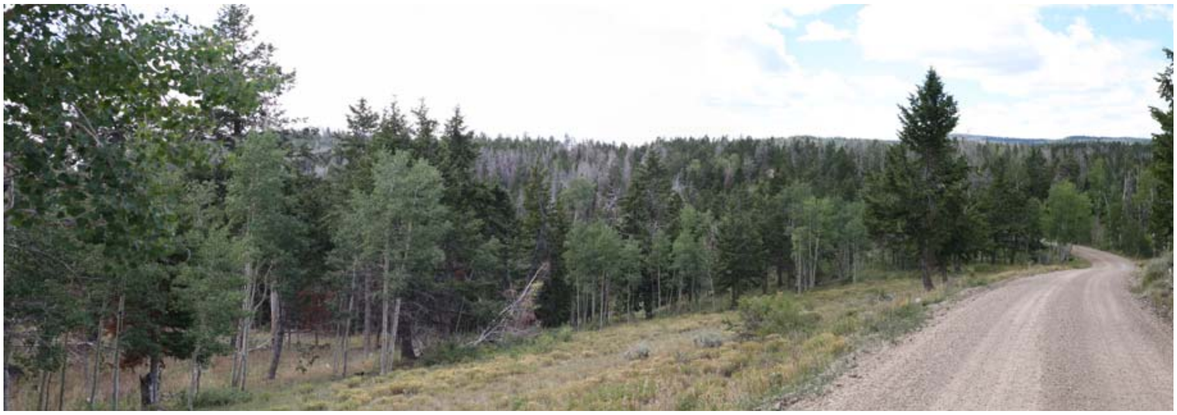
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View southwest from the Reservation Ridge Scenic Backway, Utah

Strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting designated as VRM Class III. The proposed Project would cross rolling to steep terrain and would likely include a skylined structure on the intermediate ridge visible in the photograph. Disturbance associated with the construction of access roads would introduce additional curvilinear lines into the existing landscape with tower pads generating flat, geometric forms. Vegetation clearing in the right-of-way would produce geometric forms inconsistent with the existing amorphous vegetation patterns. The proposed structures would be seen at approximately 0.3 mile paralleling the Reservation Ridge Scenic Backway with structures intermittently skylined on ridges. Selective mitigation measures #3 (minimize ground disturbance) and #4 (minimize vegetation clearing) would reduce contrast on views from this scenic road.

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

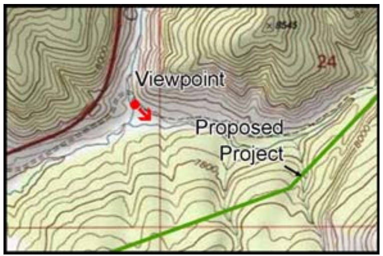
Project Name:
Energy Gateway South Transmission Project

Key Observation Point
330 Dispersed residences north of Emma Park

VRM Class/VQO:
n/a

Location:
Township: 11S
Range: 10E
Section: 23

Location Sketch



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Bold, rounded, level ridgetops and valley	Vertical, complex, pyramidal, amorphous	Low, geometric
Line	Curving, continuous, diagonal, horizontal	Flowing, complex, bands, irregular	Angular, vertical
Color	Tans, grays	Vivid green, tans, seasonal variation	Browns, black
Texture	Fine (valley) to coarse (mountain) grain	Coarse, even on slopes and scattered on ridges, stippled	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Bold, vertical; complex geometric/triangular
Line	Geometric, curvilinear	Angular, butt edge	Vertical/diagonal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			▨		▨				▨			
	Line			▨			▨			▨			
	Color			▨			▨			▨			
	Texture			▨		▨				▨			

Does project design meet visual resource management objectives?

n/a

Additional mitigating measures recommended?

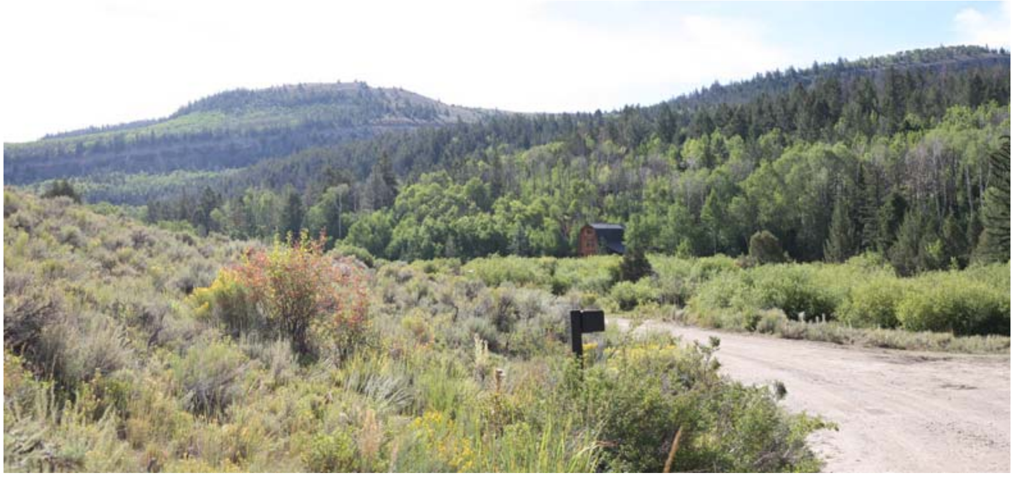
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	8/21/2013
BLM Field Office/National Forest:	Vernal Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

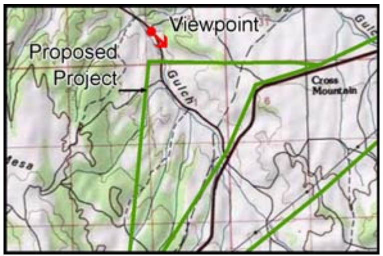


View southeast from an area of cabin development east of U.S. Highway 191, Utah

Strong contrast would result from the construction and operation of the proposed Project within this partially enclosed landscape setting associated with an area of cabin development east of U.S. Highway 191 along a tributary of Willow Creek. The proposed Project would cross rolling terrain and be visible in a partially backdropped condition with some towers mostly skylined. Disturbance associated with construction access would include building a series spur roads from existing roads to tower pads introducing additional curvilinear lines and geometric tower pads through associated earthwork efforts. Areas of right-of-way vegetation clearing would introduce geometric vegetation patterns incongruent with the existing landscape character. The proposed Project structures and conductors would be visible at approximately 0.5 mile and introduce strong structure contrast. Due to the proximity of the Project to these residences, including additional residences to the south, and limited opportunities to relocate the Project due to steep terrain to the north, minimizing these impacts through selective mitigation would be mostly associated with reducing the effects of right-of-way vegetation clearing through the application of selective mitigation measure #4.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/17/2014
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:**	Location Sketch
Key Observation Point # 331 Dinosaur NM (Deerlodge Road/Yampa Valley Trail)	Township: 6N Range: 98W	 Viewpoint Proposed Project Gulch Cross Mountain Mesa
VRM Class/VQO: III	Section: 36	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling, undulating	Stippled areas and amorphous patches	Thin, vertical
Line	Curving, angular	Butt to diffuse edges	Thin, vertical, concave (conductors)
Color	Tans	Dark greens, gray-green, tans	Brown, dull gray
Texture	Medium grain	Fine to medium grain	Medium grain

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical; complex, triangular, geometric
Line	Geometric, curvilinear	Angular, butt edge	Diagonal, horizontal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

	Features											
	Landform/ Water Body				Vegetation				Structures			
Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements: Form		■				■			■			
Elements: Line		■				■			■			
Elements: Color			■				■			■		
Elements: Texture		■					■		■			

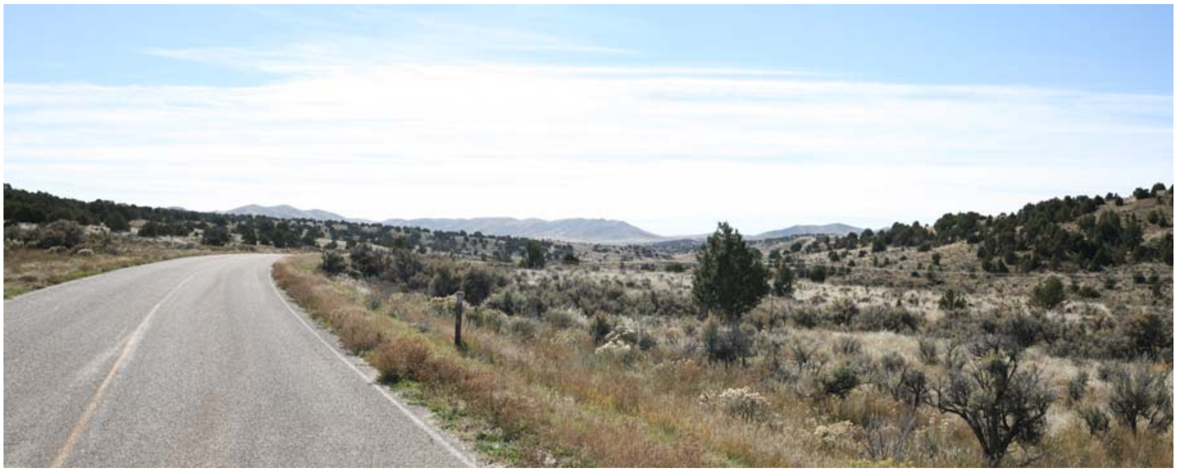
Does project design meet visual resource management objectives?

Additional mitigating measures recommended?
Yes

Evaluator(s):
EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

Date:	10/17/2014
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



View south from Deerlodge Road (Dinosaur National Monument), Colorado

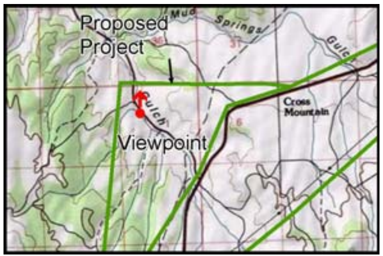
Moderate/strong to strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting viewed from Deerlodge Road, part of Dinosaur National Monument. The proposed Project crosses rolling terrain and would be skylined and partial screened by adjacent terrain. Disturbance related to the construction of access roads and clearing of vegetation in the right-of-way would be partially screened by terrain but where visible, would produce weak/moderate landscape contrast. The proposed structures would be viewed from a level to slightly inferior viewing position approximately 0.5 mile away with the most apparent existing structural element being a distribution power line. Due to the scale of this existing power line, the Project would dominate views from this location. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance), #4 (minimize vegetation clearing), and #9 (maximize span length) would be applied but these would not reduce contrast associated with the introduction of the additional transmission structures.

Note, VRM Class III lands are viewed approximately 0.75 mile away where the Project would be partially to completely screened by topography. Due to this level of screening, the Project would be compliant with VRM Class III objectives.

VISUAL CONTRAST RATING WORKSHEET

Date:	10/17/2014
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project

Project Name: Energy Gateway South Transmission Project	**Location:** Township: 5N	Location Sketch
Key Observation Point # 332 Dinosaur NM (Deerlodge Road)	Range: 98W	
VRM Class/VQO: n/a	Section: 1	



Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal, rounded	Amorphous patches	Low, geometric
Line	Continuous, horizontal	Diffuse to butt edges from juniper stands	Horizontal, diagonal
Color	Tans	Light tan, dark green	Grays, browns
Texture	Fine to medium grain	Fine to medium grain	Medium grain, sparse density

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Level, horizontal	Geometric, rectangular	Vertical; complex, triangular, geometric
Line	Geometric, curvilinear	Angular, butt edge	Diagonal, horizontal; thin concave (conductors)
Color	Tans	Tans, gray-green	Dull gray, transparent
Texture	Fine grain	Fine to medium grain	Uniform coarse grain, medium density

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		■				■			■			
	Line			■				■		■			
	Color			■				■			■		
	Texture		■					■		■			

Does project design meet visual resource management objectives?

Additional mitigating measures recommended?

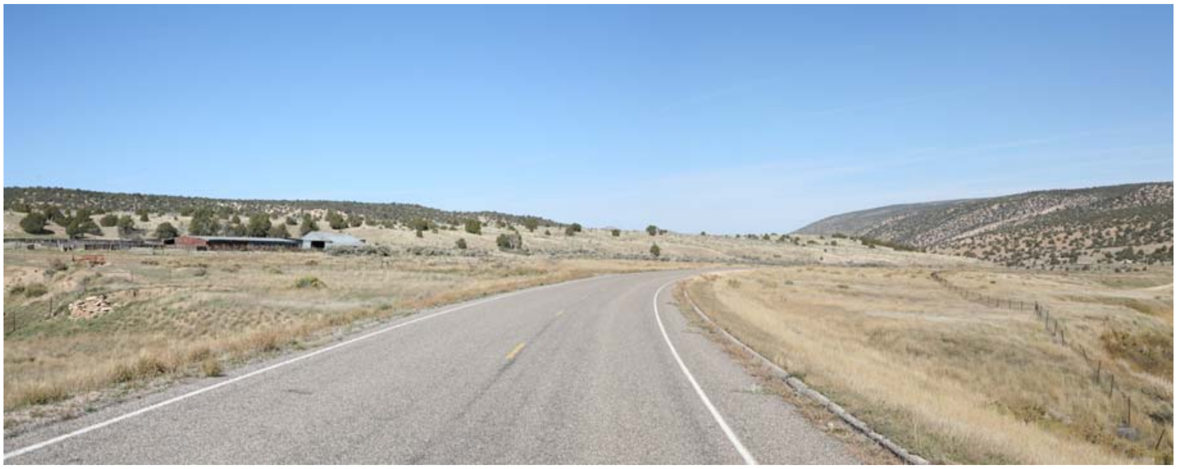
Yes

Evaluator(s):

EPG visual personnel

VISUAL CONTRAST RATING WORKSHEET

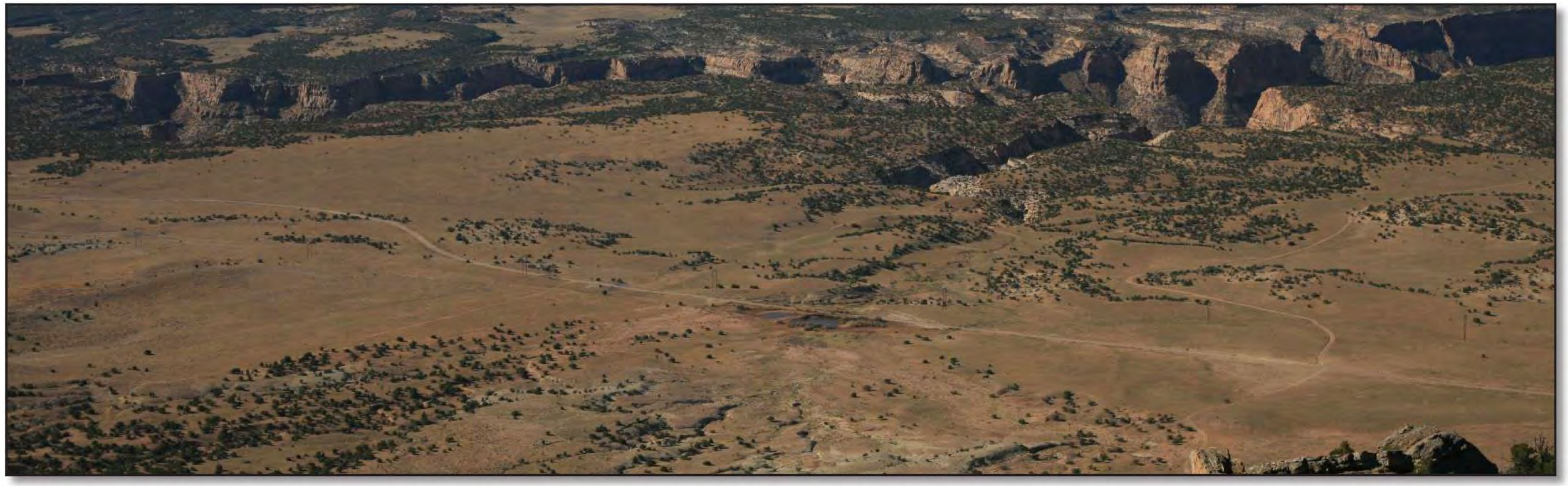
Date:	10/17/2014
BLM Field Office/National Forest:	Little Snake Field Office
Resource Area:	
Activity (program):	500kV Transmission Project



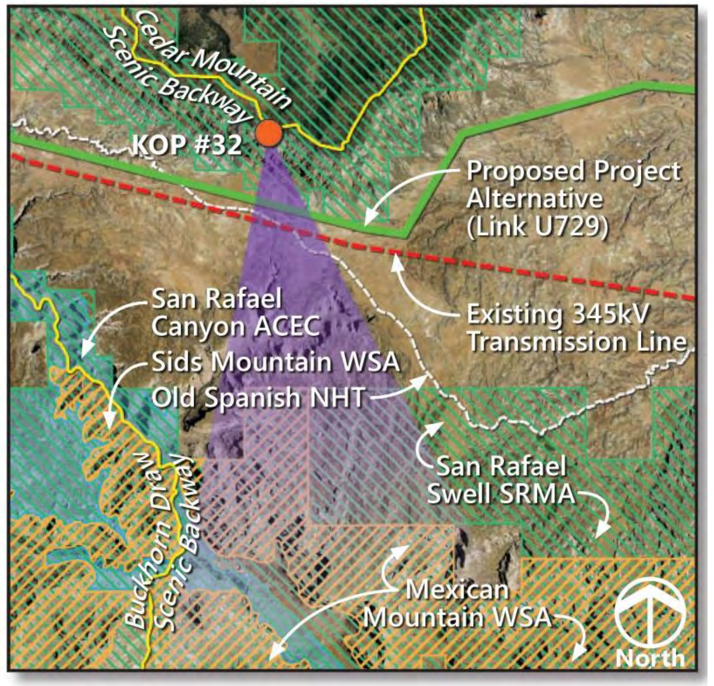
View northwest from Deerlodge Road (Dinosaur National Monument), Colorado

Moderate/strong to strong contrast would result from the construction and operation of the proposed Project within a panoramic landscape setting viewed from Deerlodge Road, part of Dinosaur National Monument. The proposed Project crosses rolling terrain and would be skylined and partial screened by adjacent terrain. Disturbance related to the construction of access roads and clearing of vegetation in the right-of-way would be partially screened by terrain but where visible, would produce weak/moderate landscape contrast. The proposed structures would be viewed from a level to slightly inferior viewing position approximately 0.5 mile away with the most apparent existing structural element being agricultural structures to the west of the road. Due to the scale of these buildings, the Project would dominate views from this location. To reduce contrast, selective mitigation measures #3 (minimize ground disturbance), #4 (minimize vegetation clearing), and #9 (maximize span length) would be applied but these would not reduce contrast associated with the introduction of the additional transmission structures.

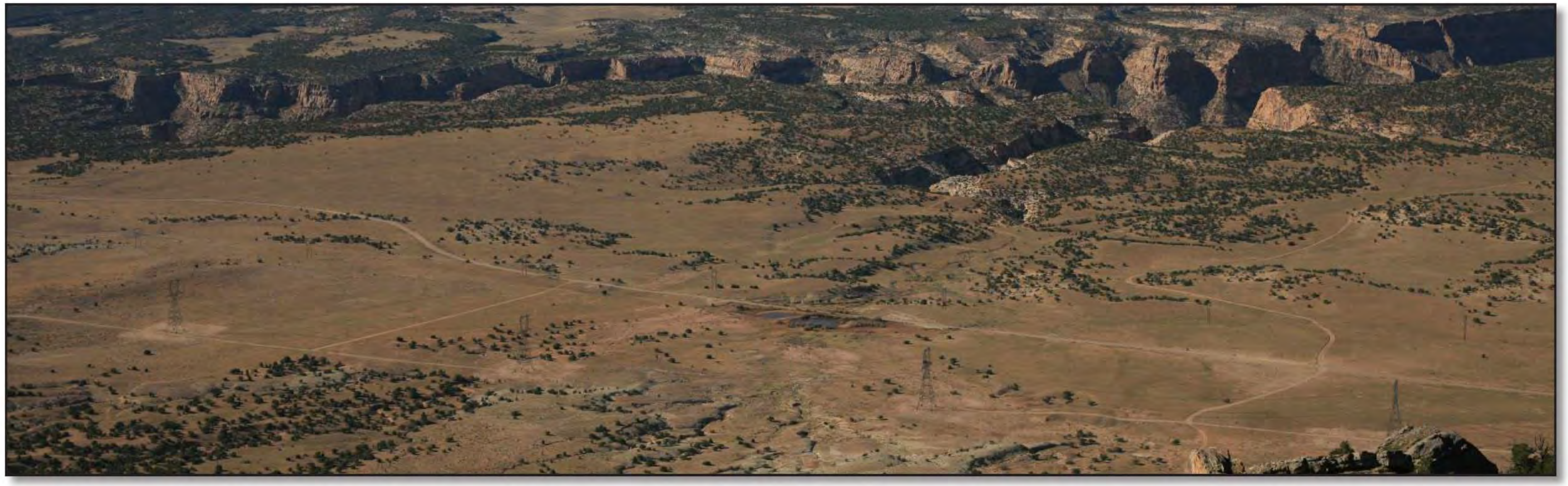
Exhibit M3
Visual Simulations



Existing Condition – View looking south from the Cedar Mountain Overlook toward the San Rafael Swell, Buckhorn Flat, and the Old Spanish NHT with an existing 345kV transmission line crossing BLM VRM Class III lands

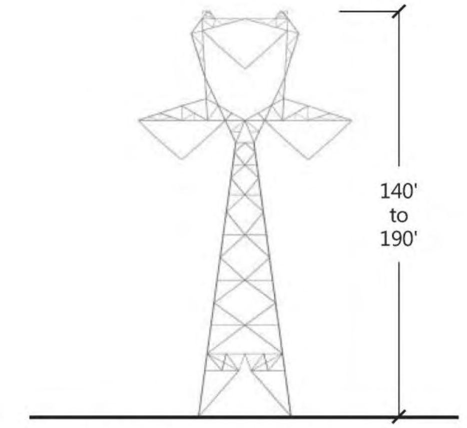

Cedar Mountain Scenic Backway
KOP #32
Proposed Project Alternative (Link U729)
Existing 345kV Transmission Line
San Rafael Canyon ACEC
Sids Mountain WSA
Old Spanish NHT
San Rafael Swell SRMA
Buckhorn Draw Scenic Backway
Mexican Mountain WSA
North

View Location: Approximate distance to proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternative COUT BAX-B

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

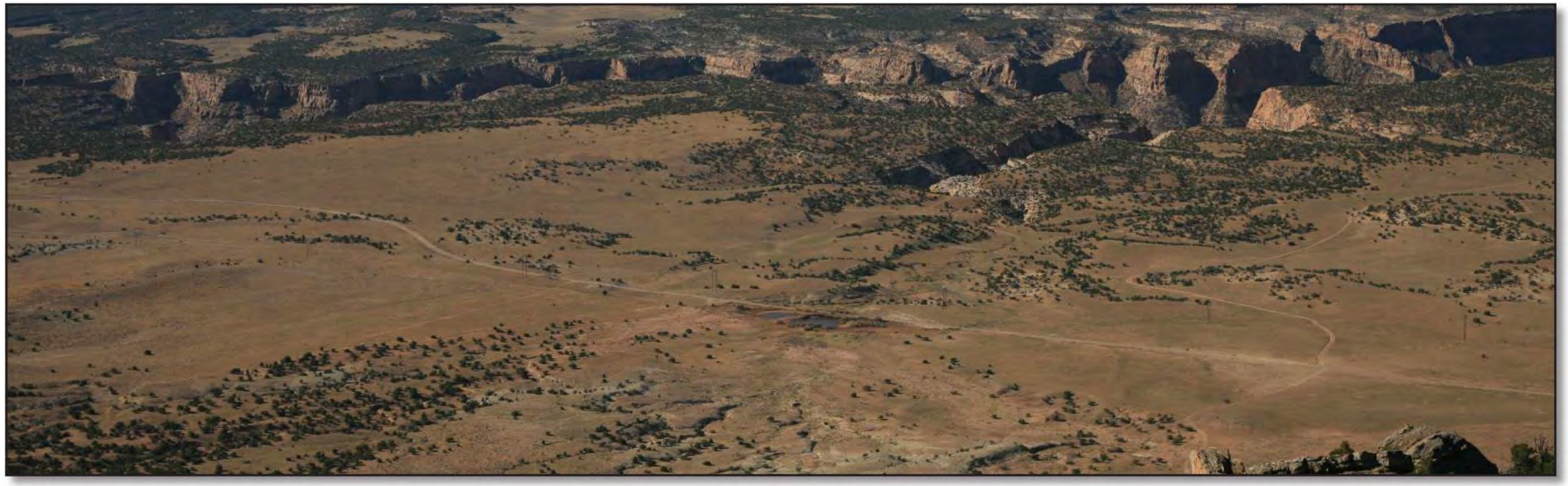
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #32a – Cedar Mountain Overlook

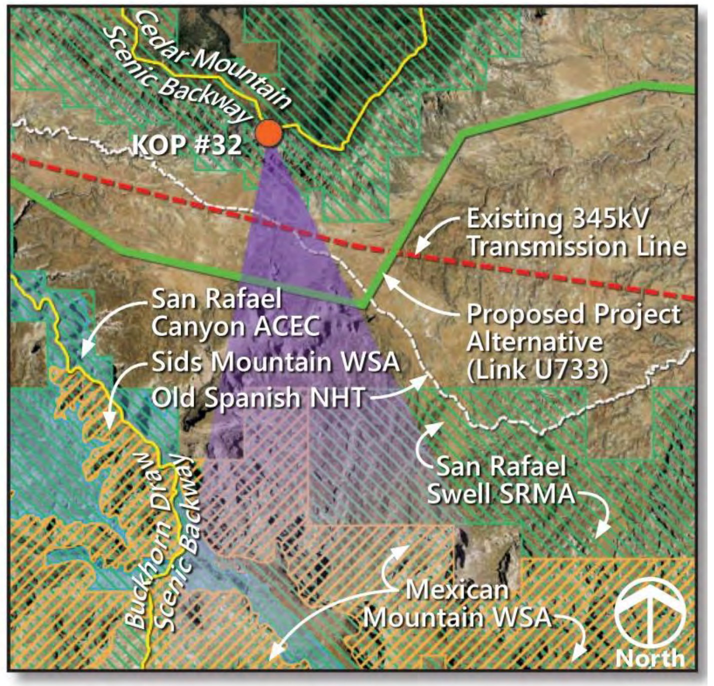
Photo Date and Time: July 26, 2012, 8:25 a.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

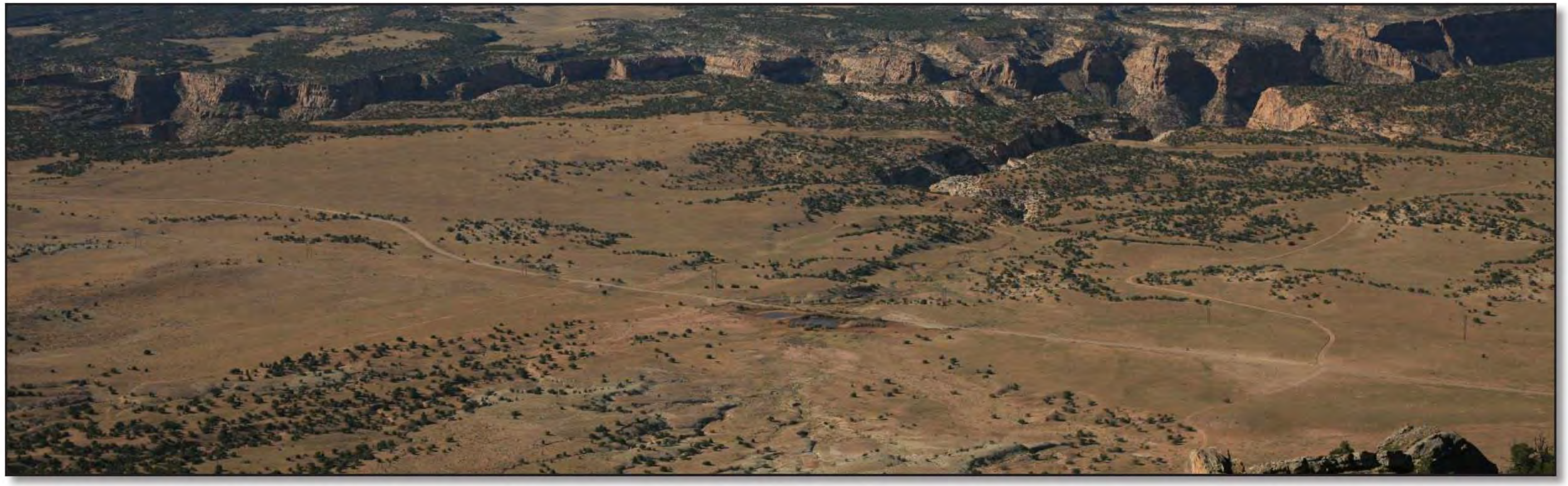
September 2015



Existing Condition – View looking south from the Cedar Mountain Overlook toward the San Rafael Swell, Buckhorn Flat, and the Old Spanish NHT with an existing 345kV transmission line crossing BLM VRM Class III lands

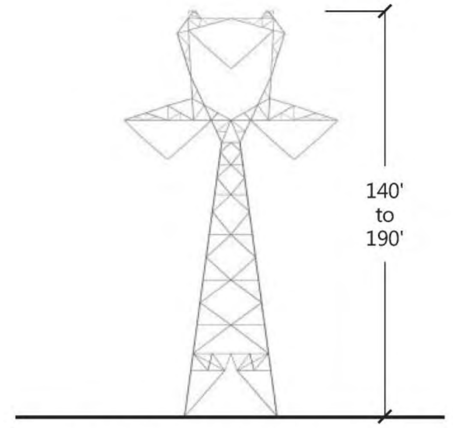

Cedar Mountain Scenic Backway
KOP #32
Existing 345kV Transmission Line
San Rafael Canyon ACEC
Sids Mountain WSA
Old Spanish NHT
Proposed Project Alternative (Link U733)
San Rafael Swell SRMA
Buckhorn Draw Scenic Backway
Mexican Mountain WSA
North

View Location: Approximate distance to proposed transmission line from photo location is 2.2 miles.



Simulated Condition – View of Alternative COUT BAX-C

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized
self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

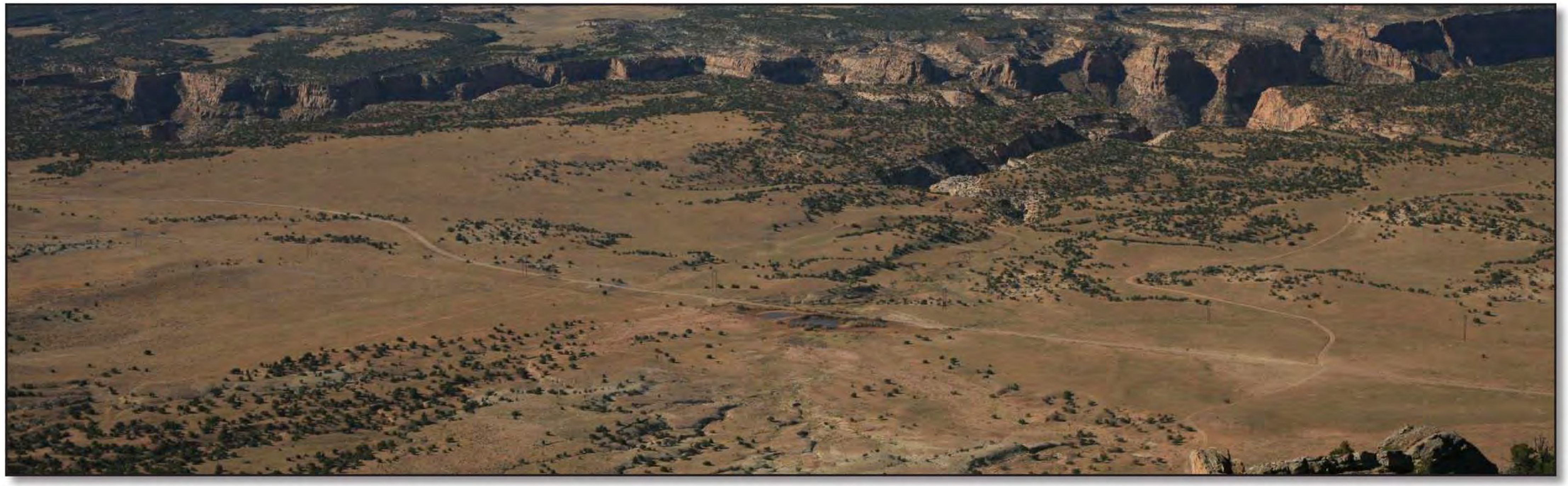
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #32b – Cedar Mountain Overlook

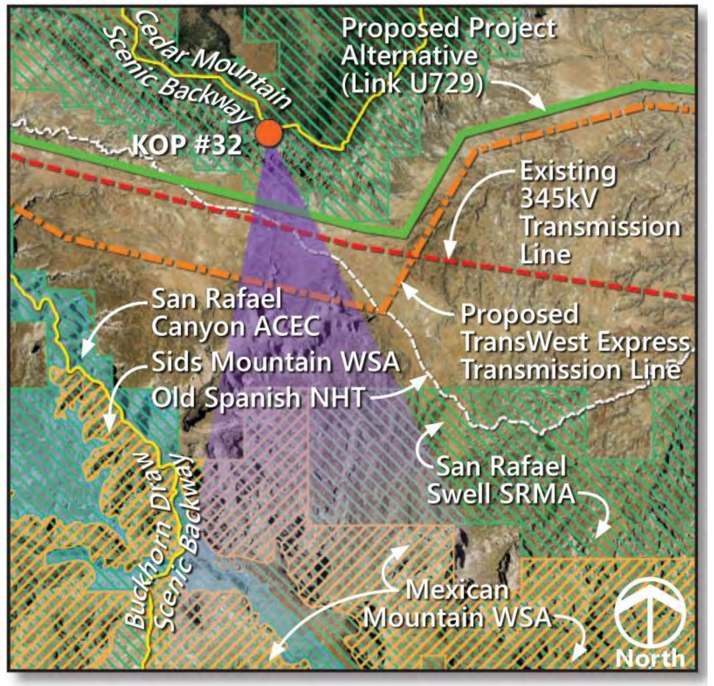
Photo Date and Time: July 26, 2012, 8:25 a.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

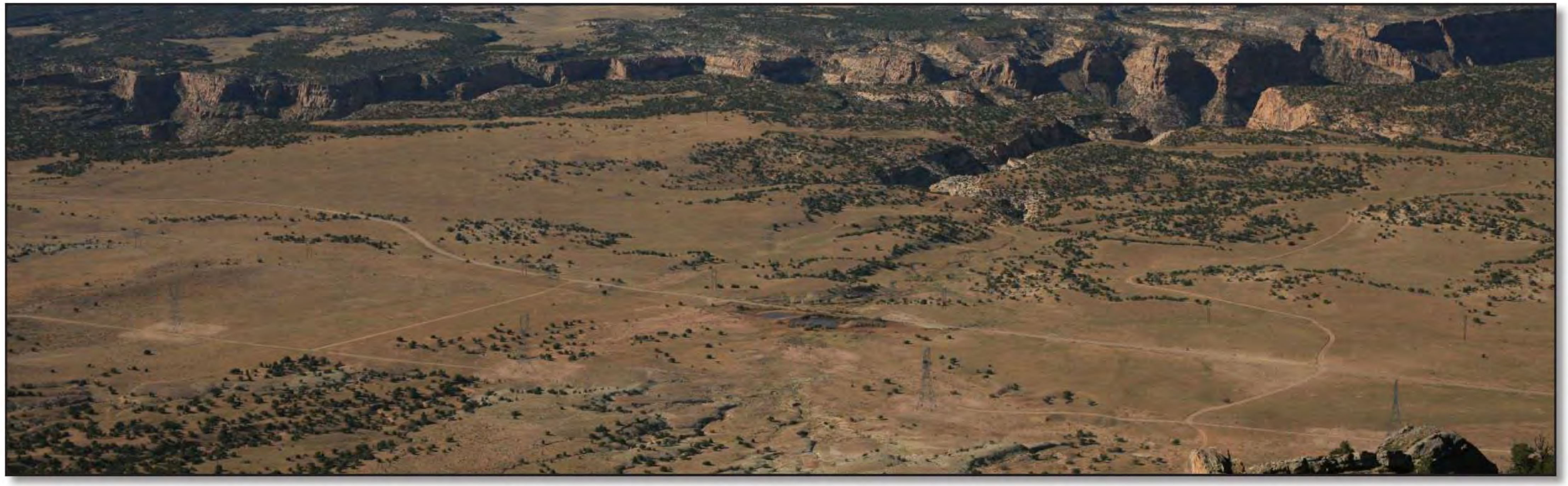
September 2015



Existing Condition – View looking south from the Cedar Mountain Overlook toward the San Rafael Swell, Buckhorn Flat, and the Old Spanish NHT with an existing 345kV transmission line crossing BLM VRM Class III lands

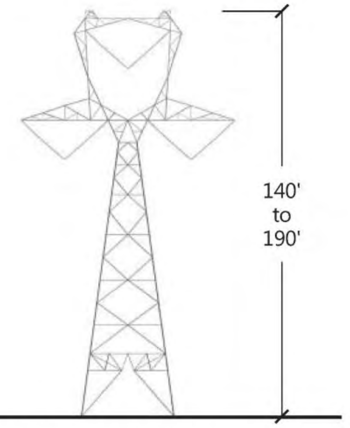

Cedar Mountain Scenic Backway
Proposed Project Alternative (Link U729)
KOP #32
Existing 345kV Transmission Line
San Rafael Canyon ACEC
Sids Mountain WSA
Old Spanish NHT
Proposed TransWest Express Transmission Line
San Rafael Swell SRMA
Buckhorn Draw Scenic Backway
Mexican Mountain WSA
North

View Location: Approximate distance to proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternative COUT BAX-B and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

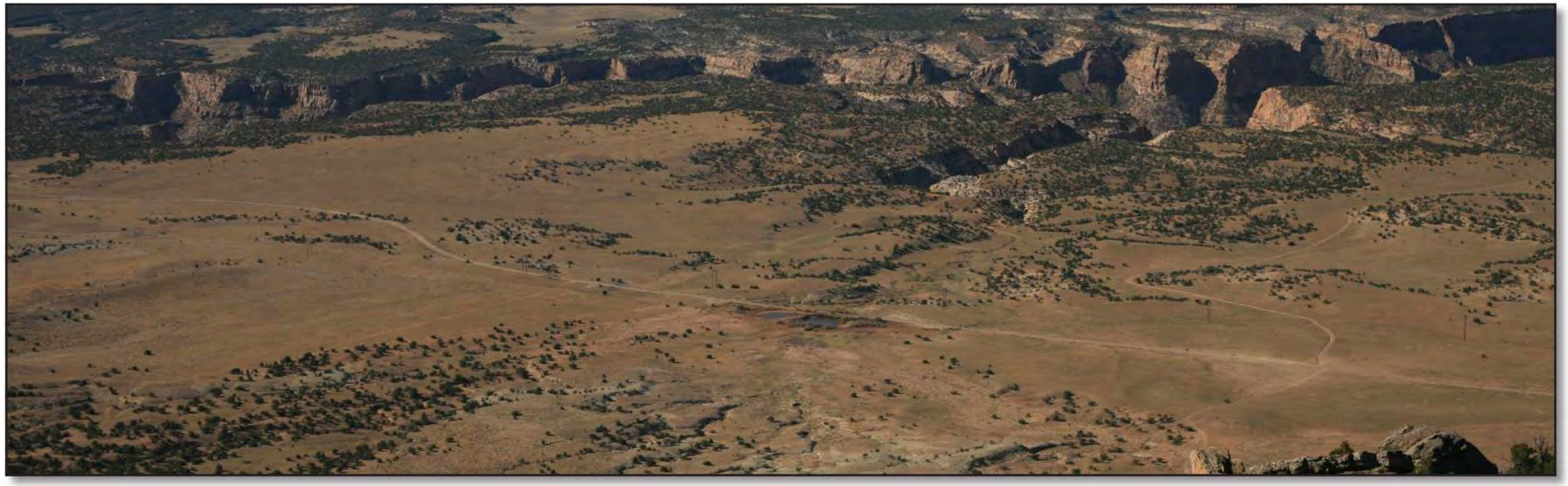
Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 26, 2012, 8:25 a.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

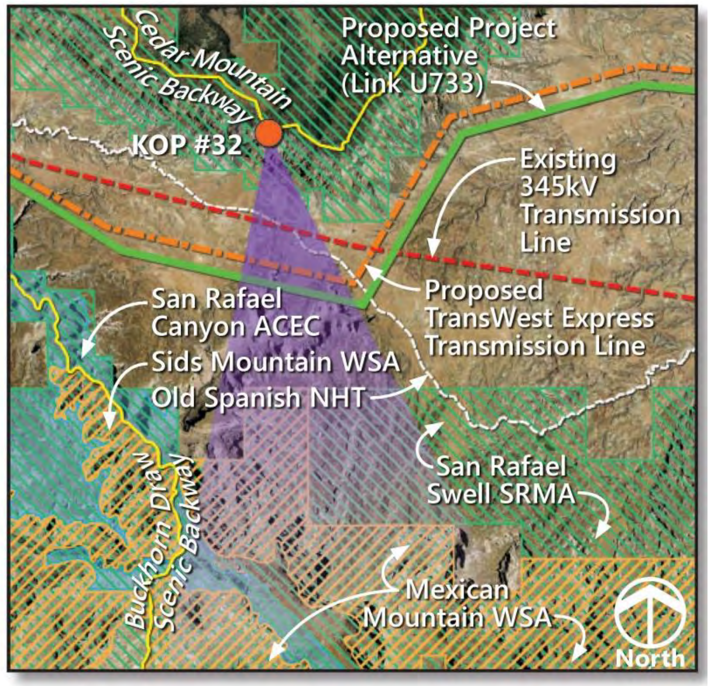
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

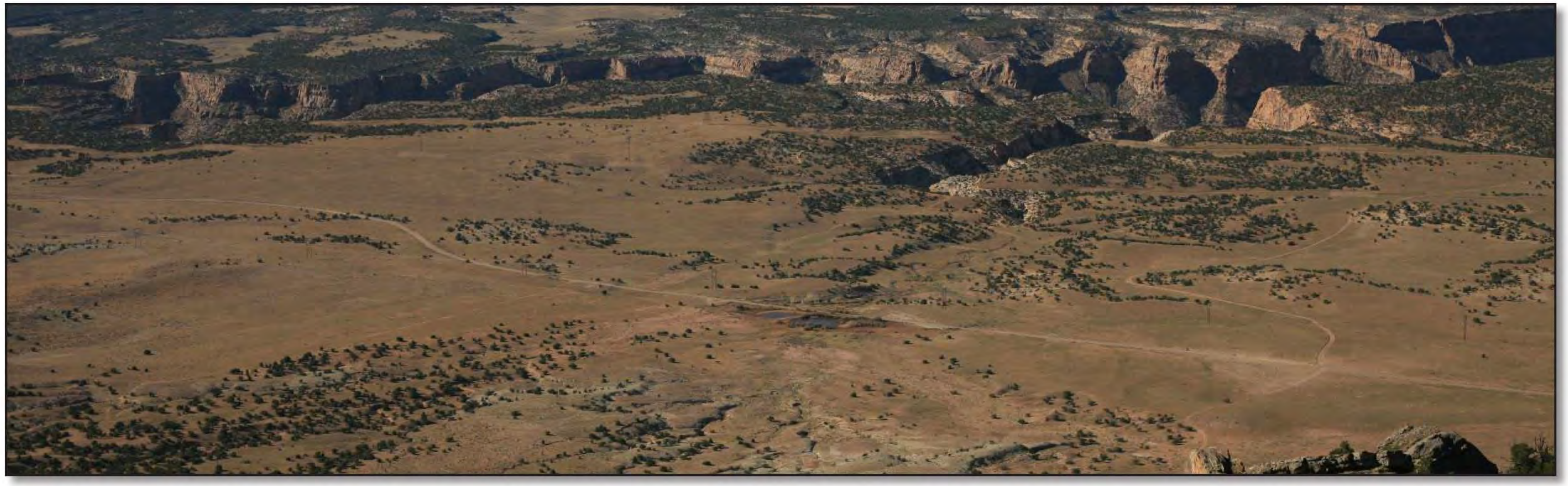
KOP #32a – Cedar Mountain Overlook Cumulative Effects



Existing Condition – View looking south from the Cedar Mountain Overlook toward the San Rafael Swell, Buckhorn Flat, and the Old Spanish NHT with an existing 345kV transmission line crossing BLM VRM Class III lands

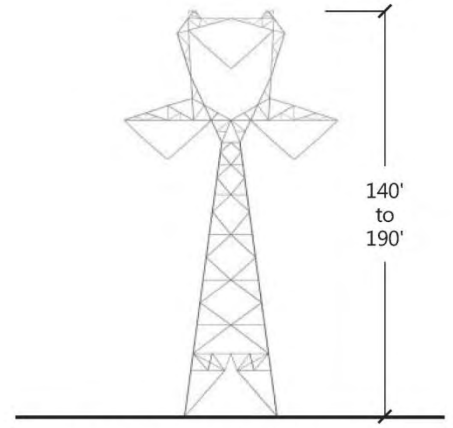

Cedar Mountain Scenic Backway
Proposed Project Alternative (Link U733)
KOP #32
Existing 345kV Transmission Line
Proposed TransWest Express Transmission Line
San Rafael Canyon ACEC
Sids Mountain WSA
Old Spanish NHT
San Rafael Swell SRMA
Buckhorn Draw Scenic Backway
Mexican Mountain WSA
North

View Location: Approximate distance to proposed transmission line from photo location is 2.2 miles.



Simulated Condition – View of Alternative COUT BAX-C and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 26, 2012, 8:25 a.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

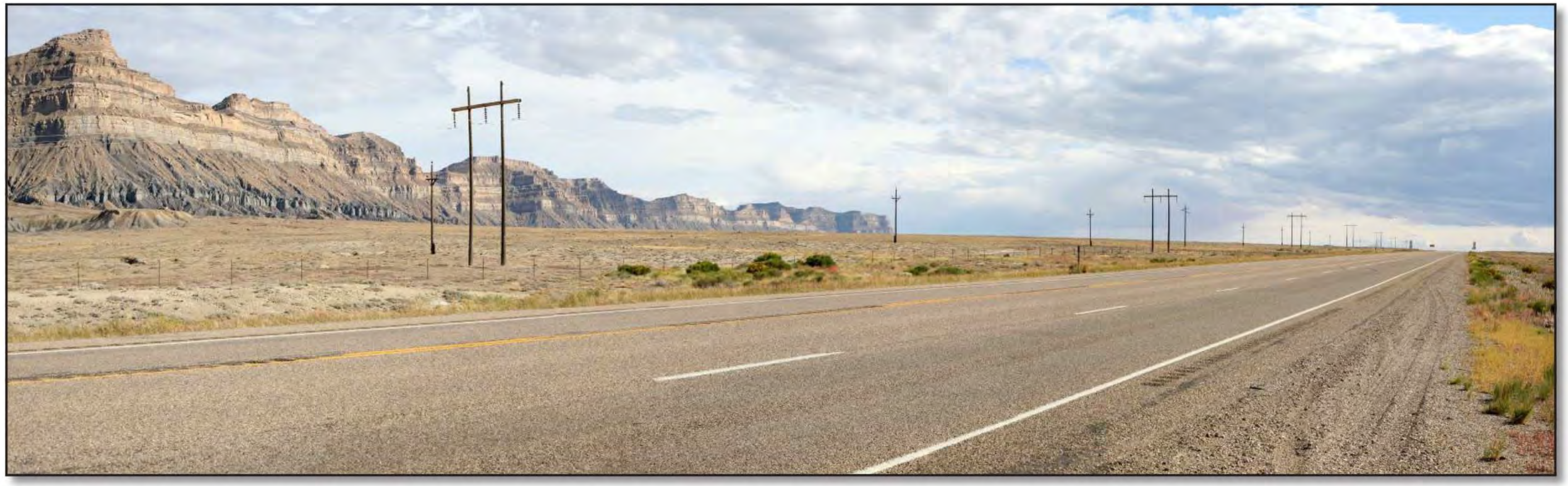
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

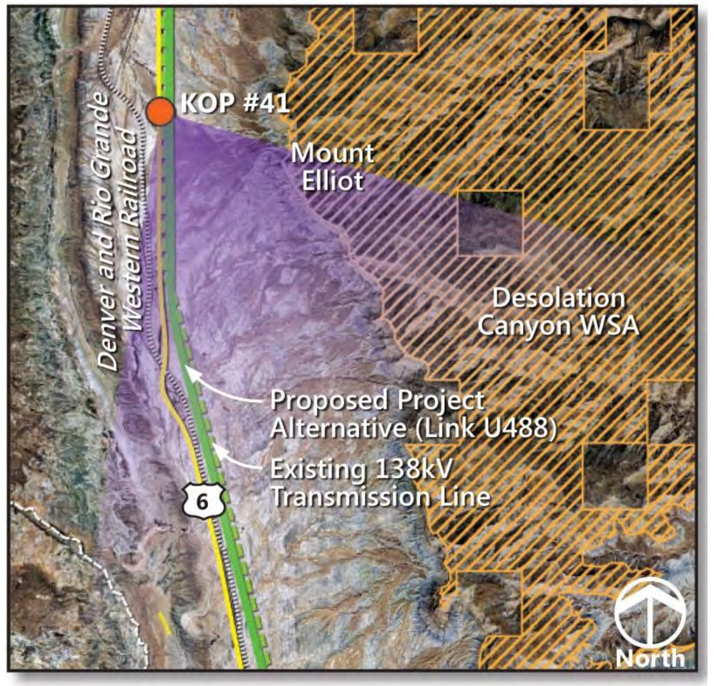
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #32b – Cedar Mountain Overlook Cumulative Effects

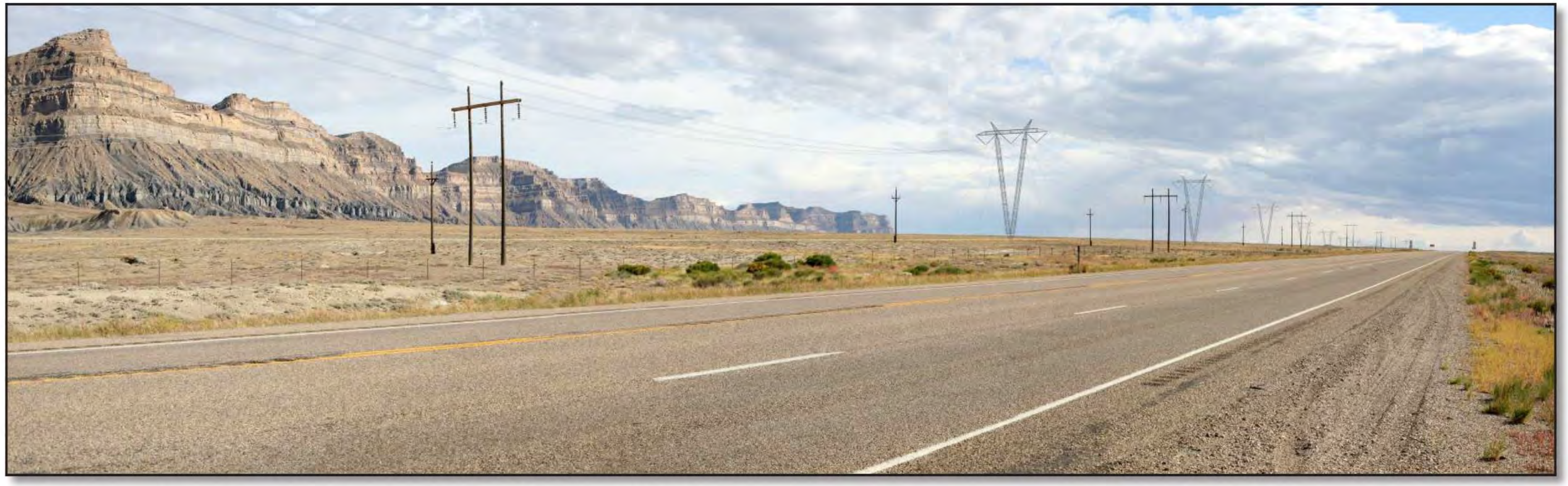
September 2015



Existing Condition – View looking southeast from the Dinosaur Diamond Scenic Byway (U.S. Highway 6) at the intersection of the Green River Cutoff Road toward Mount Elliot and the Book Cliffs


KOP #41
Mount Elliot
Denver and Rio Grande Western Railroad
Desolation Canyon WSA
Proposed Project Alternative (Link U488)
Existing 138kV Transmission Line
6
North

View Location: The proposed transmission line would be located adjacent to the photo location.

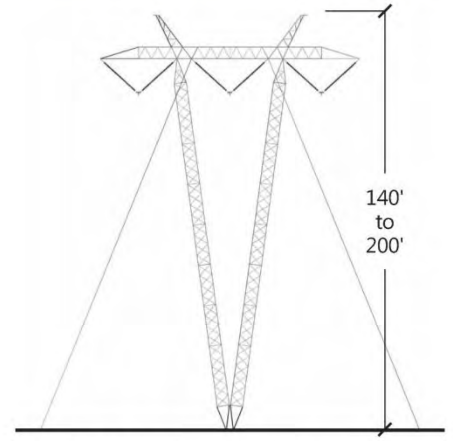


Simulated Condition – View of Alternatives COUT BAX-C and COUT BAX-E

Photo Date and Time: October 4, 2011, 4:03 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

500kV TOWER STRUCTURE DIAGRAM

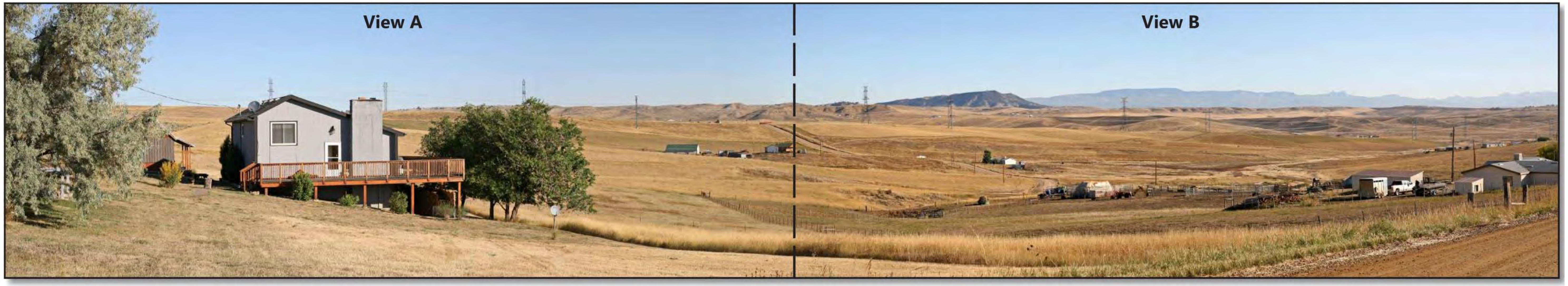


Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

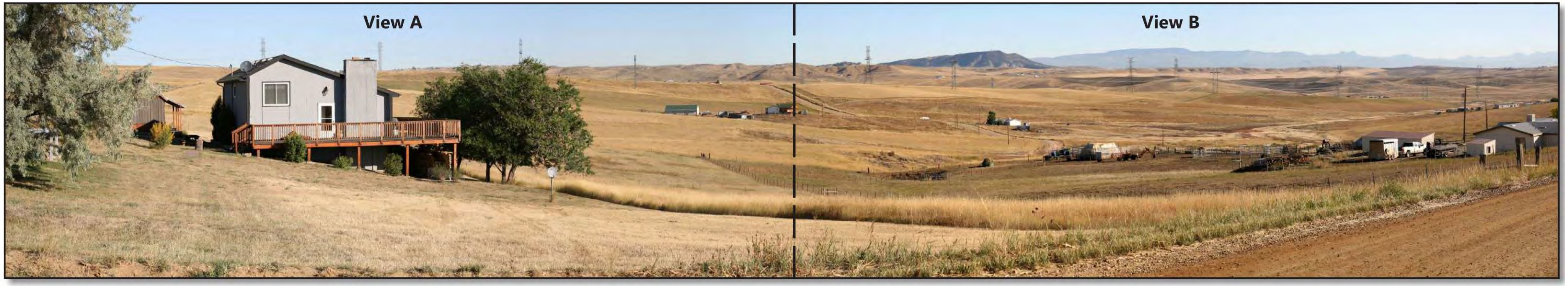
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #41 – Dinosaur Diamond Scenic Byway (US 6)

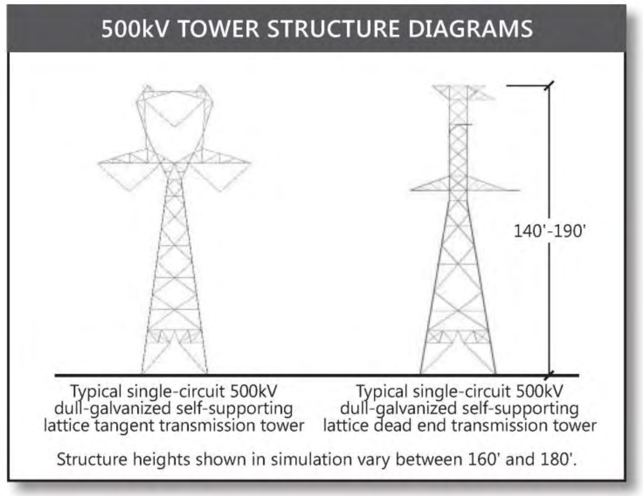
September 2015



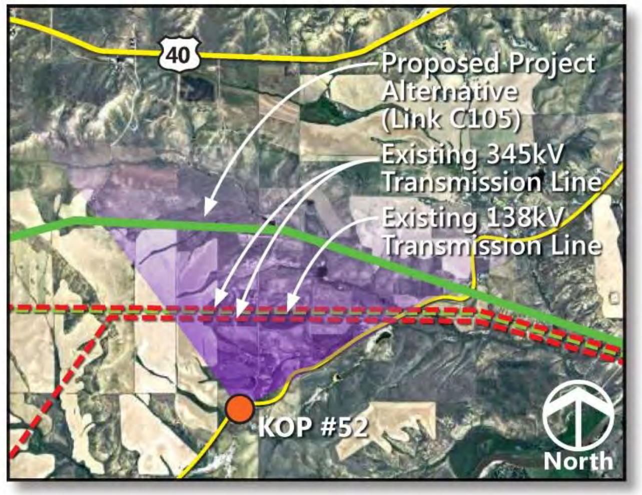
Existing Condition – View looking northeast from residences southwest of Craig, Colorado



Simulated Condition – View of Alternative WYCO-D[1]


500kV TOWER STRUCTURE DIAGRAMS
140'-190'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice dead end transmission tower

Structure heights shown in simulation vary between 160' and 180'.


40
Proposed Project Alternative (Link C105)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
KOP #52
North

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

View Location:
Approximate distance to proposed transmission line from photo location is 1.1 miles.

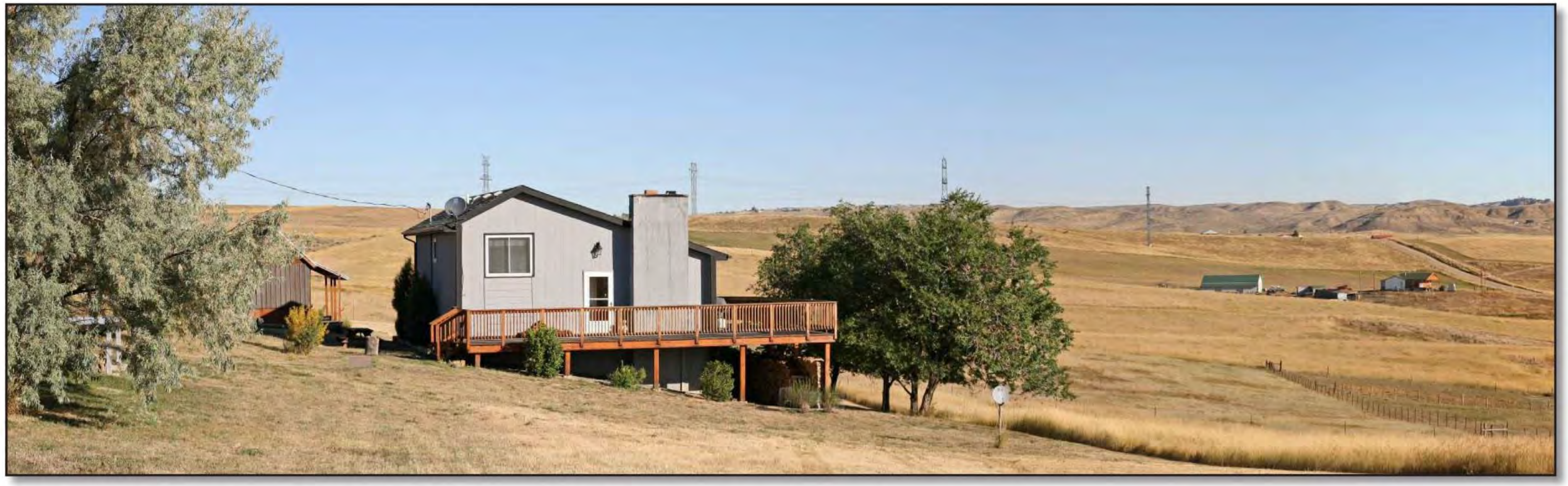
Note:[1] This view is in vicinity of Series Compensation Station Siting Area D – Bell Rock. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

Photo Date and Time: September 27, 2011, 9:05 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 100-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

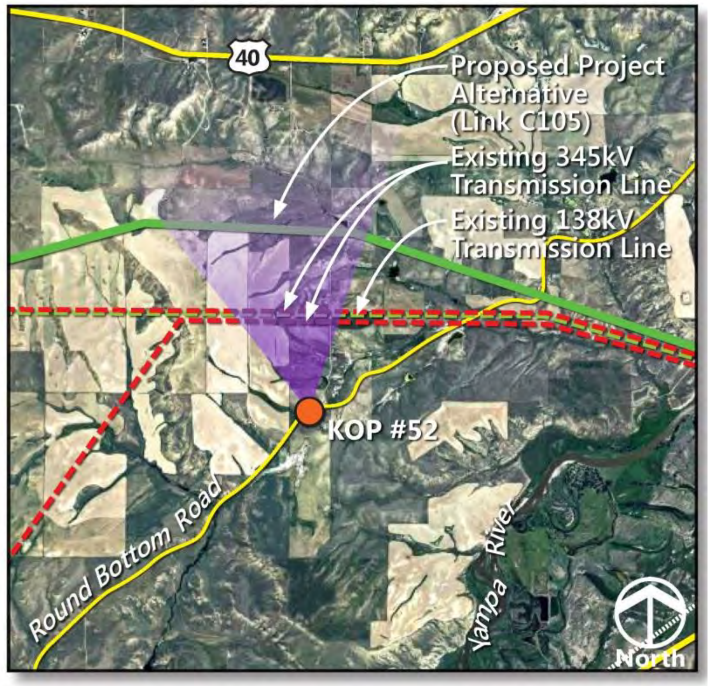
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #52 – Dispersed Residences southwest of Craig

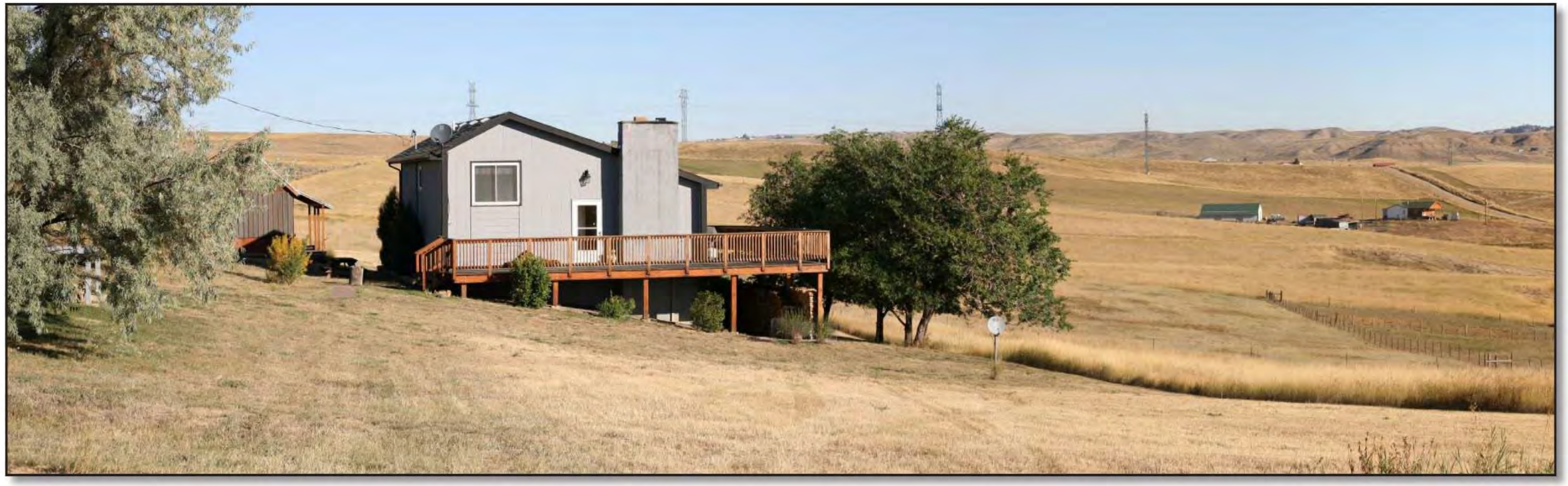
September 2015



Existing Condition – View looking northeast from residences southwest of Craig, Colorado

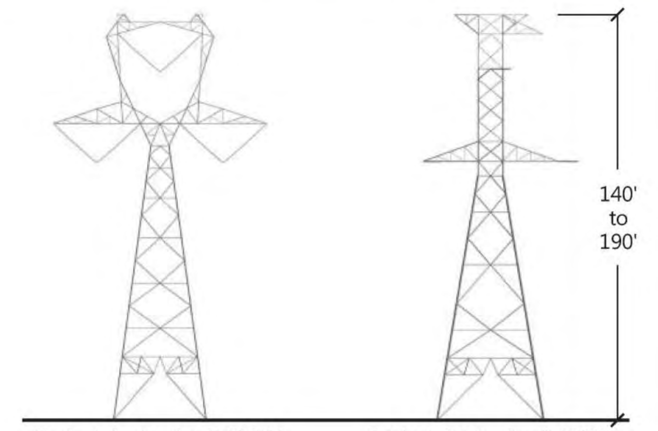

40
Proposed Project Alternative (Link C105)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
KOP #52
Round Bottom Road
Yampa River
North

View Location: Approximate distance of proposed transmission line from photo location is 1.1 miles.



Simulated Condition – View of Alternative WYCO-D[1]

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Note:[1] This view is in vicinity of Series Compensation Station Siting Area D – Bell Rock. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

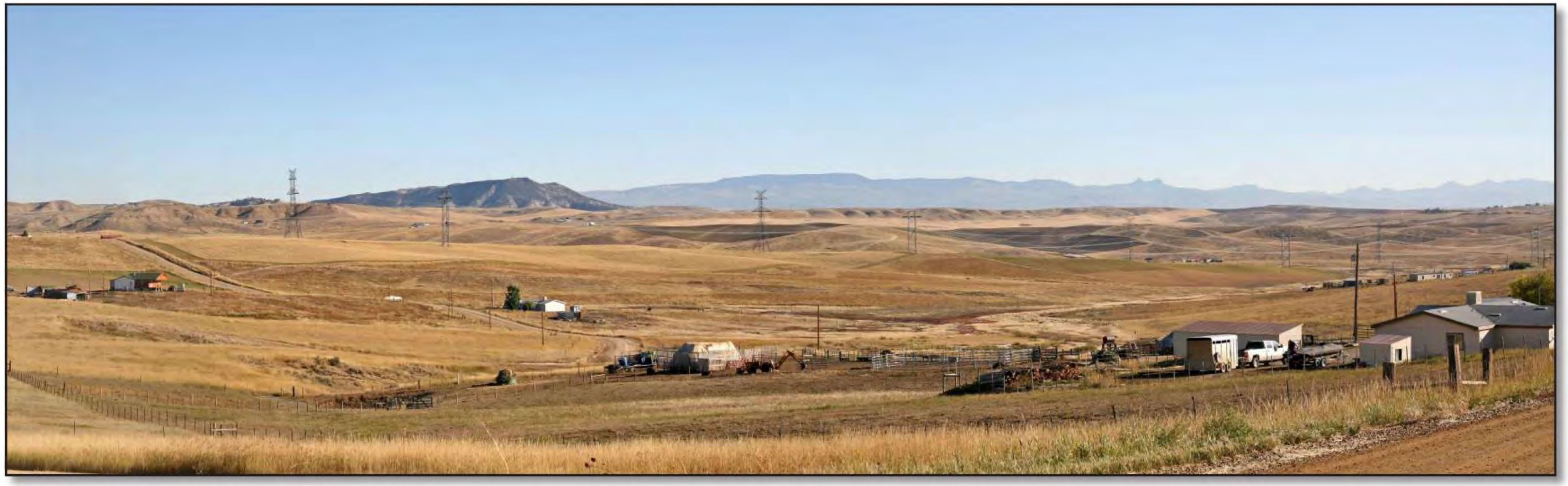
Photo Date and Time: September 27, 2011, 9:05 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 44-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

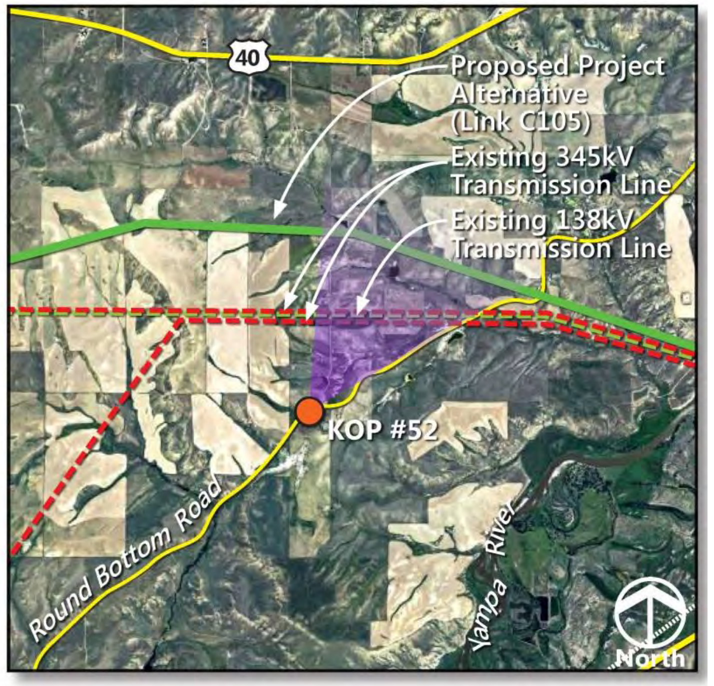
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #52 – Dispersed Residences southwest of Craig ~View A~

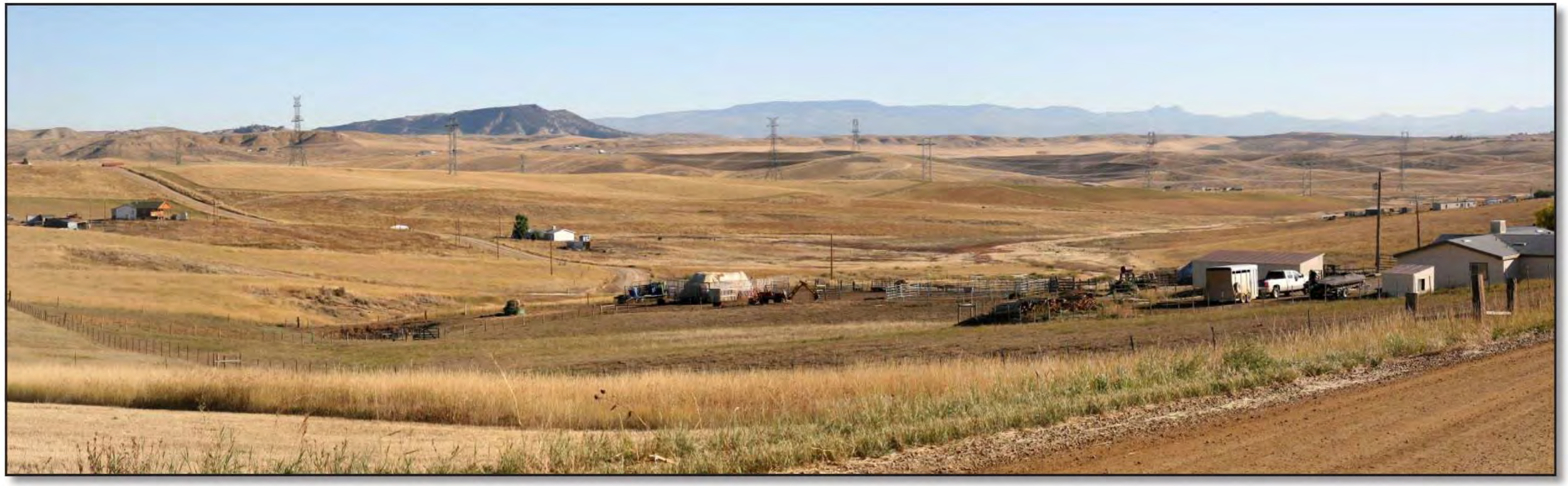
September 2015



Existing Condition – View looking northeast from residences southwest of Craig, Colorado

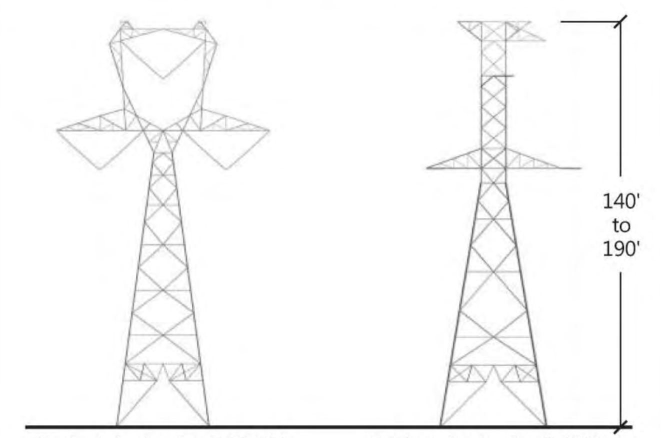

40
Proposed Project Alternative (Link C105)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
KOP #52
Round Bottom Road
Yampa River
North

View Location: Approximate distance of proposed transmission line from photo location is 1.1 miles.



Simulated Condition – View of Alternative WYCO-D[1]

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

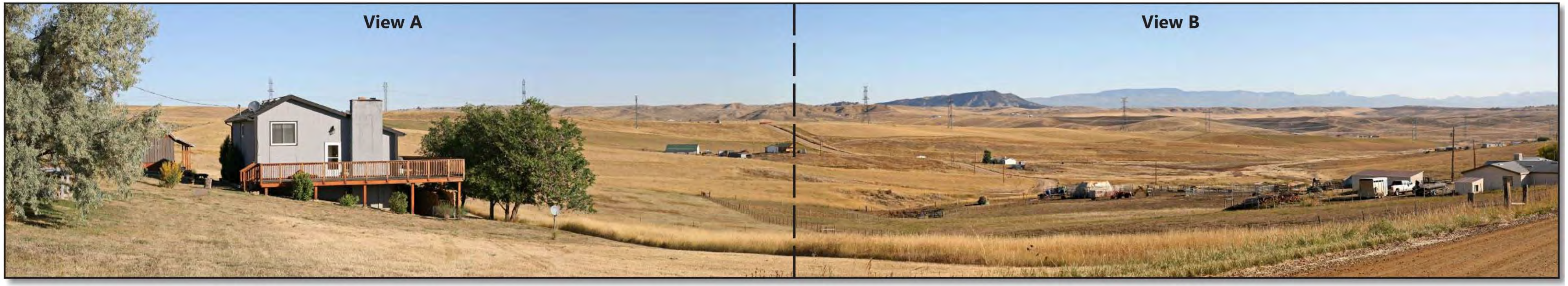
Note:[1] This view is in vicinity of Series Compensation Station Siting Area D – Bell Rock. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

Photo Date and Time: September 27, 2011, 9:05 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 54-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

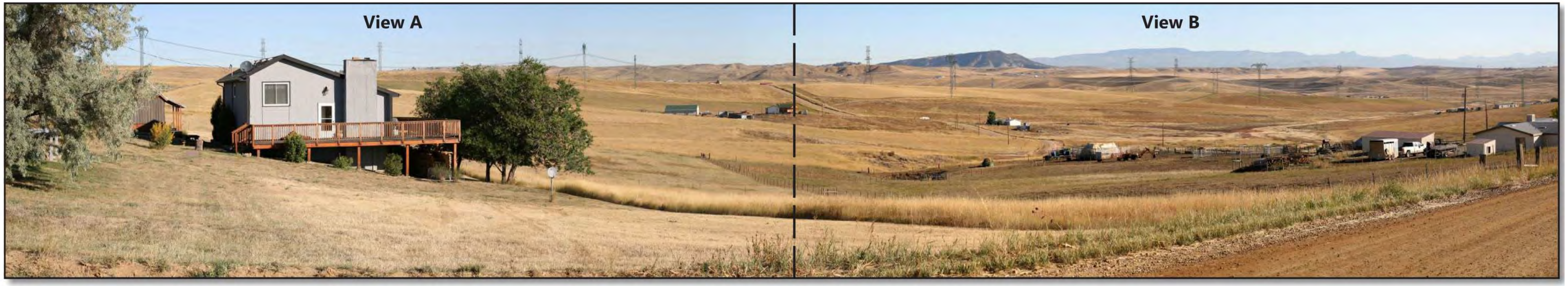
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #52 – Dispersed Residences southwest of Craig ~View B~

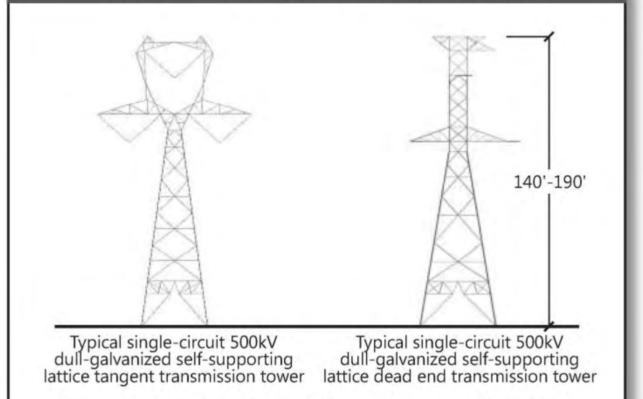


Existing Condition – View looking northeast from residences southwest of Craig, Colorado

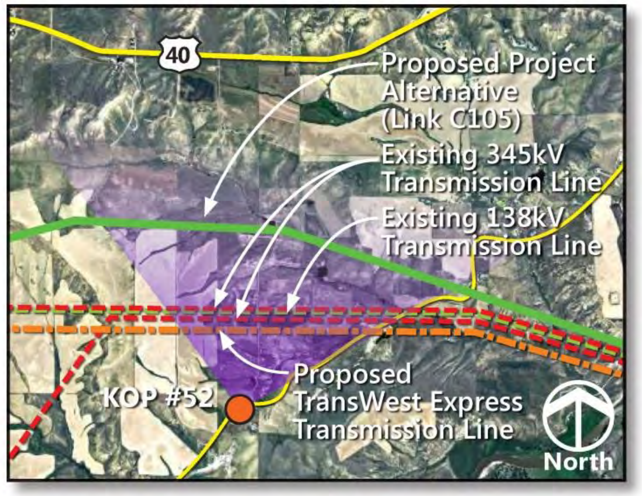


Simulated Condition – View of Alternative WYCO-D[1] and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS


140'-190'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice dead end transmission tower

Structure heights shown in simulation vary between 160' and 180'.


40
Proposed Project Alternative (Link C105)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
Proposed TransWest Express Transmission Line
KOP #52
North

Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

View Location:
Approximate distance to proposed transmission line from photo location is 1.1 miles.

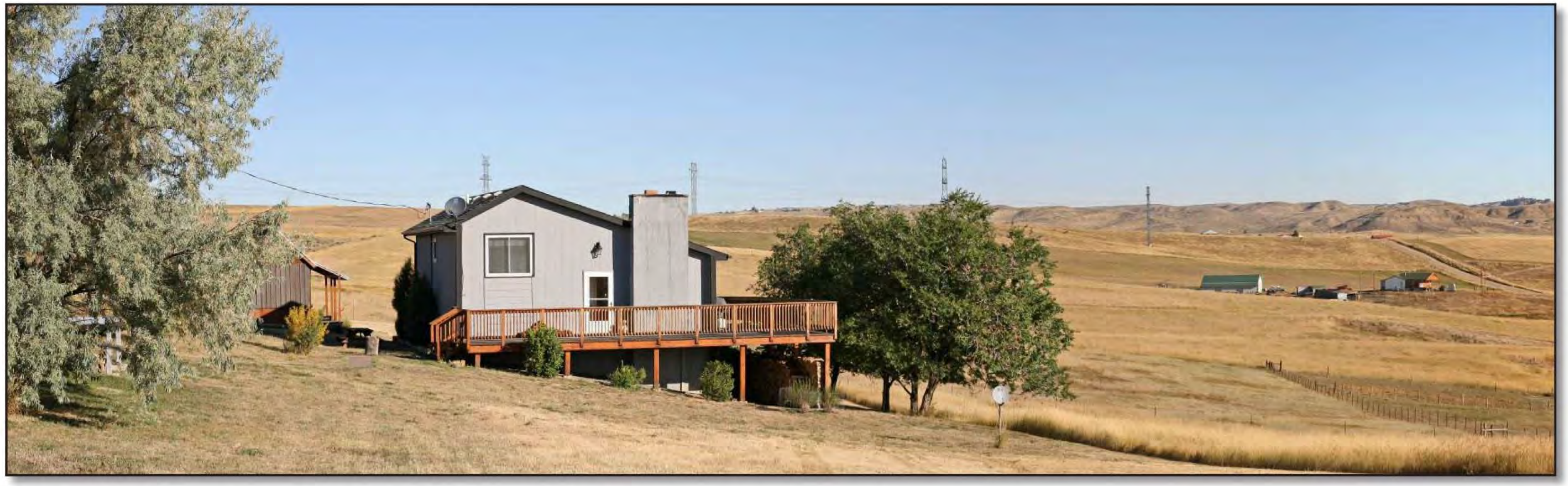
Note:[1] This view is in vicinity of Series Compensation Station Siting Area D – Bell Rock. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

Photo Date and Time: September 27, 2011, 9:05 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 100-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

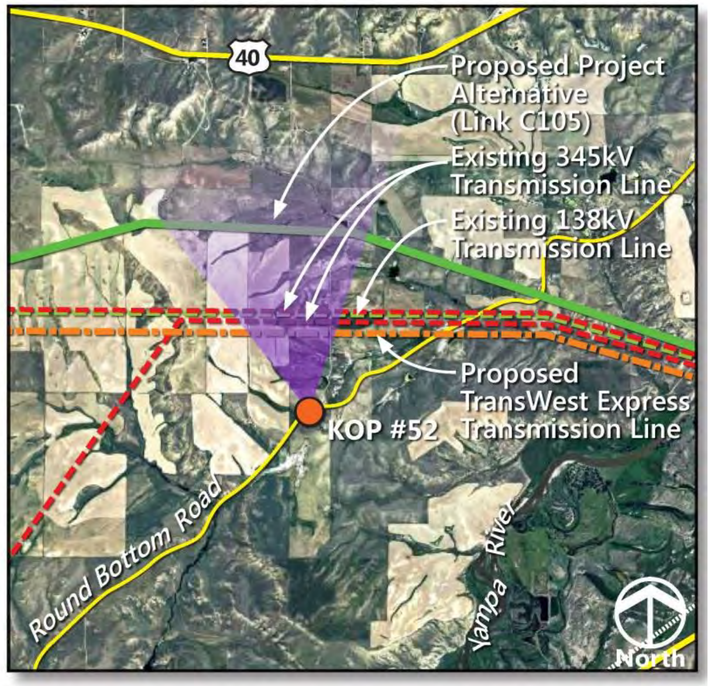
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #52 – Dispersed Residences southwest of Craig Cumulative Effects

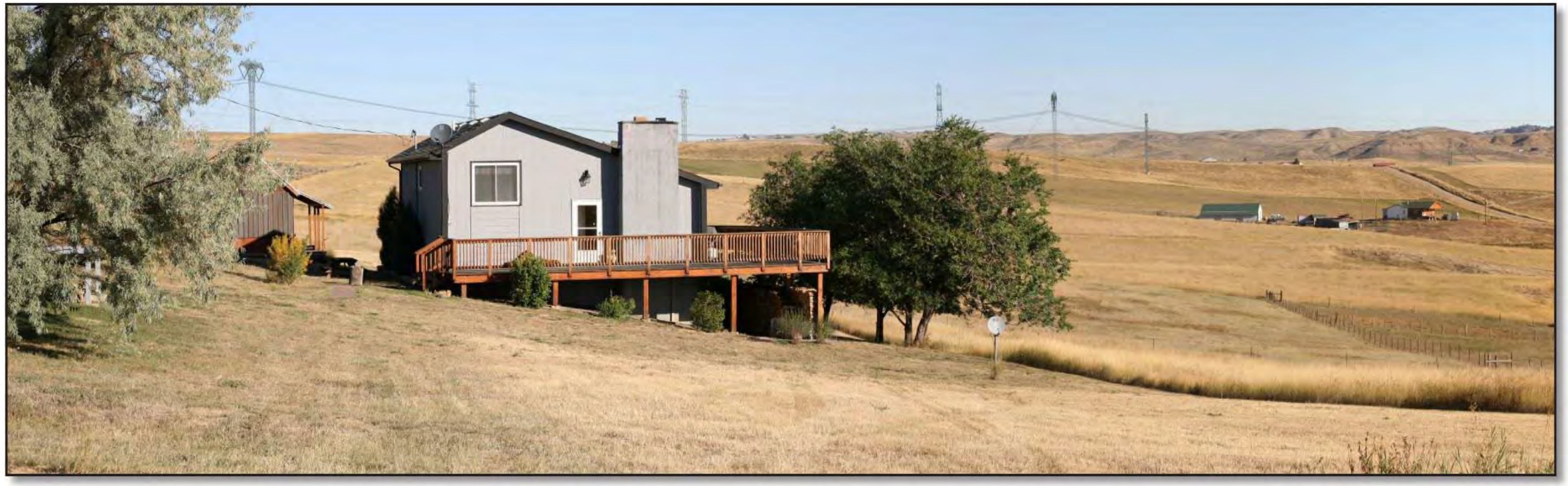
September 2015



Existing Condition – View looking northeast from residences southwest of Craig, Colorado

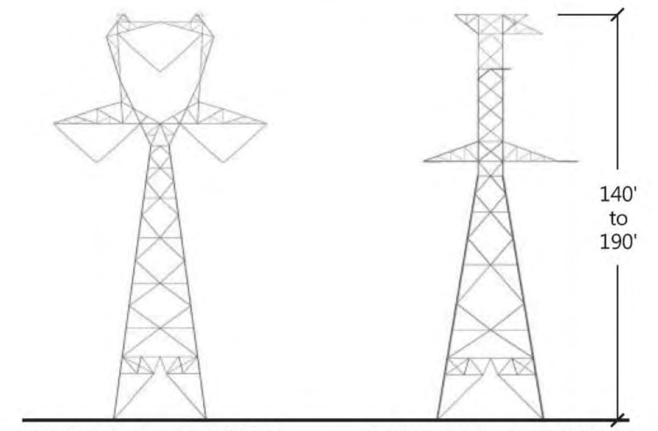

40
Proposed Project Alternative (Link C105)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
Proposed TransWest Express Transmission Line
KOP #52
Round Bottom Road
Yampa River
North

View Location: Approximate distance of proposed transmission line from photo location is 1.1 miles.



Simulated Condition – View of Alternative WYCO-D[1] and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Note:[1] This view is in vicinity of Series Compensation Station Siting Area D – Bell Rock. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

Photo Date and Time: September 27, 2011, 9:05 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 44-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

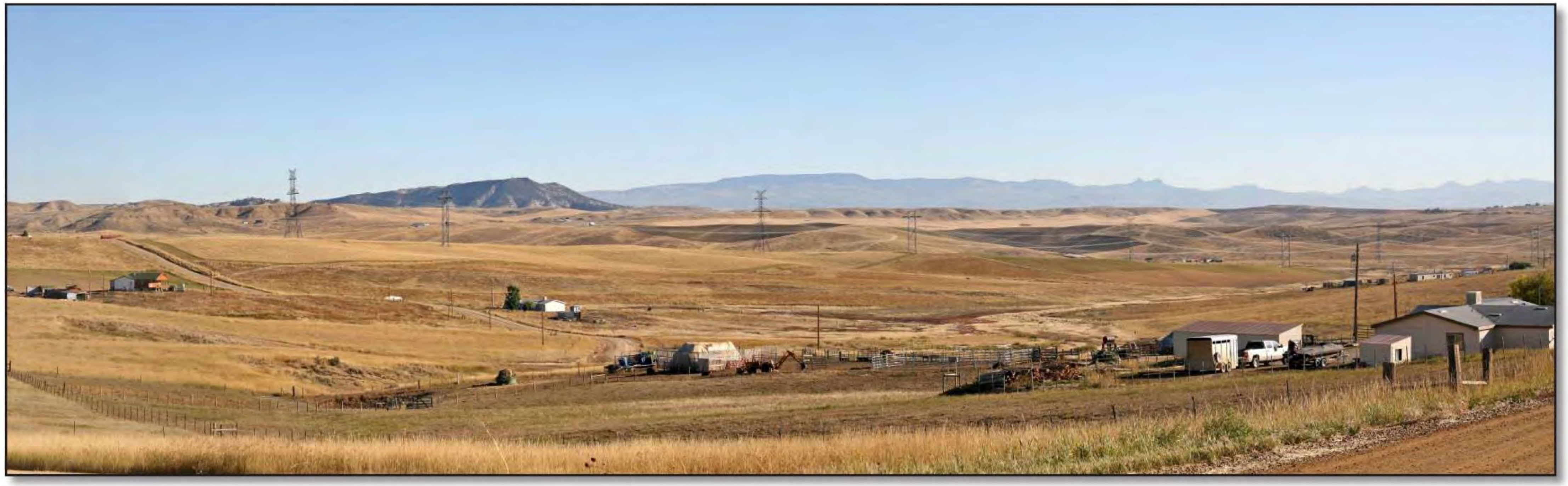
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

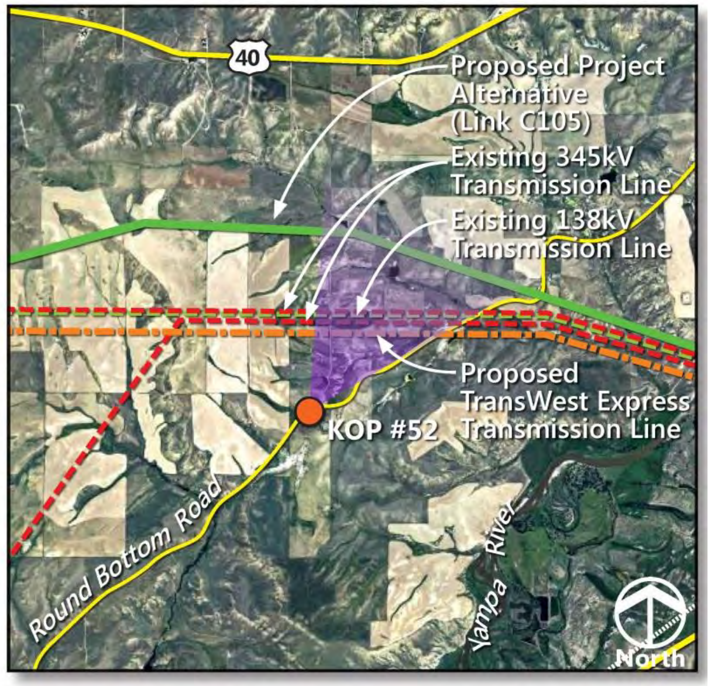
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #52 – Dispersed Residences southwest of Craig ~View A~ Cumulative Effects

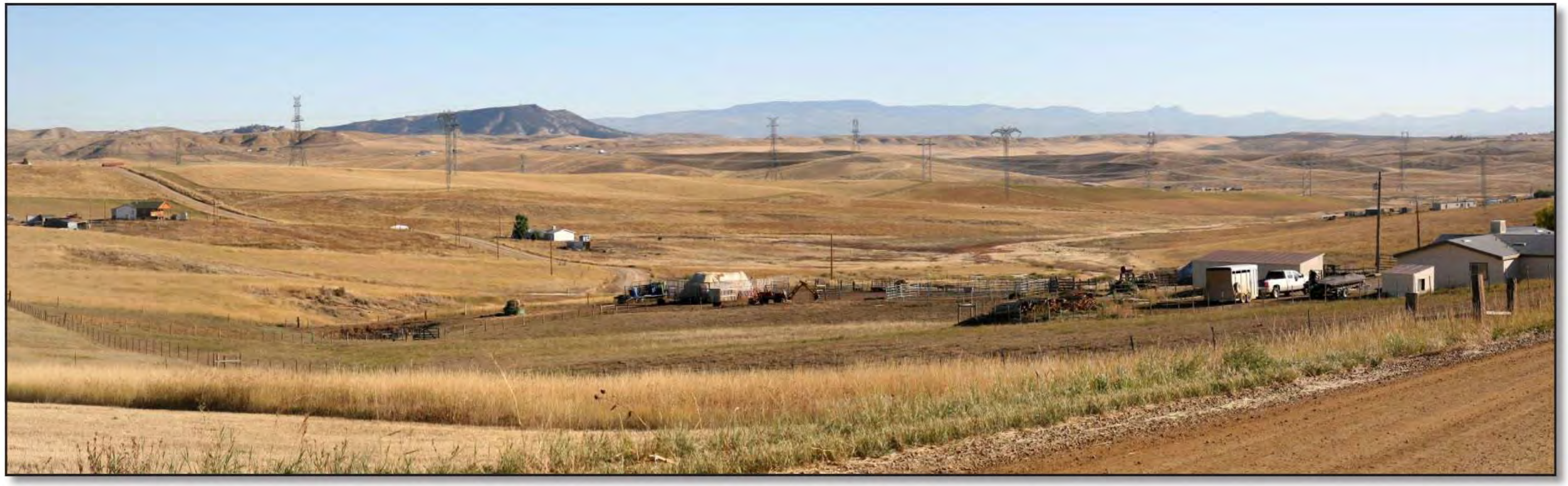
September 2015



Existing Condition – View looking northeast from residences southwest of Craig, Colorado

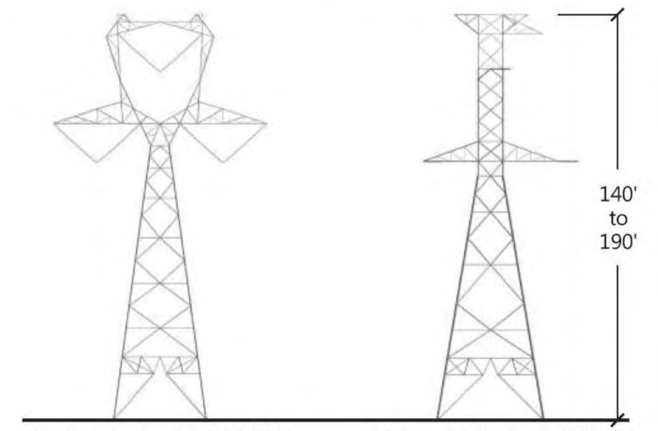

40
Proposed Project Alternative (Link C105)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
Proposed TransWest Express Transmission Line
KOP #52
Round Bottom Road
Yampa River
North

View Location: Approximate distance of proposed transmission line from photo location is 1.1 miles.



Simulated Condition – View of Alternative WYCO-D[1] and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Note:[1] This view is in vicinity of Series Compensation Station Siting Area D – Bell Rock. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

Photo Date and Time: September 27, 2011, 9:05 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 54-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

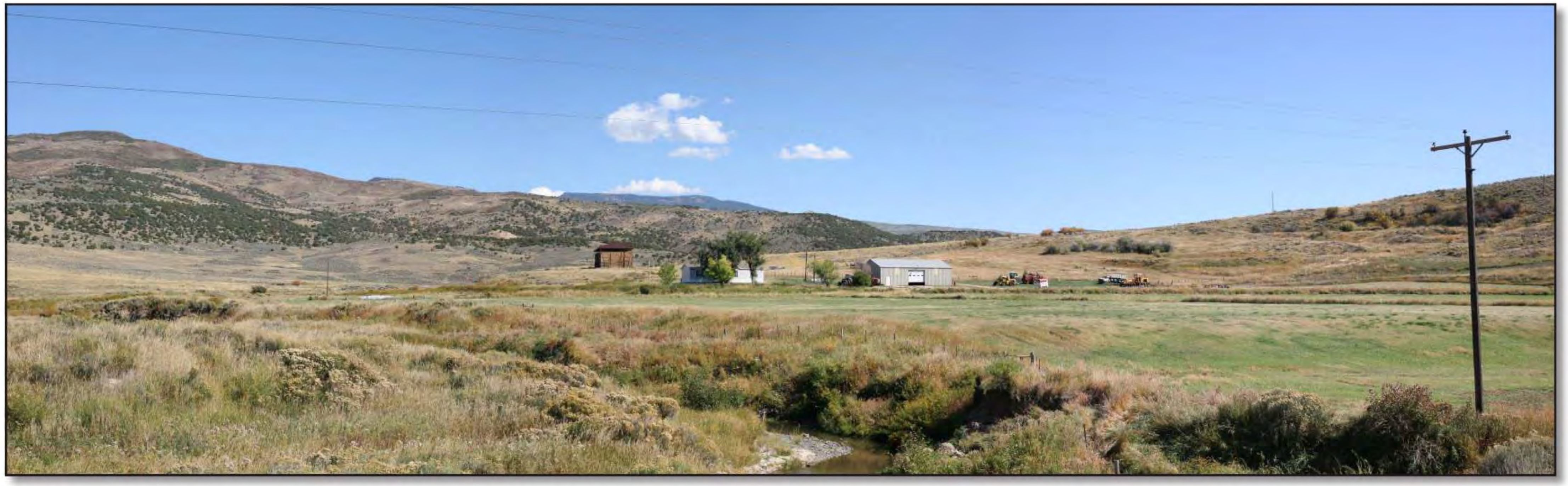
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

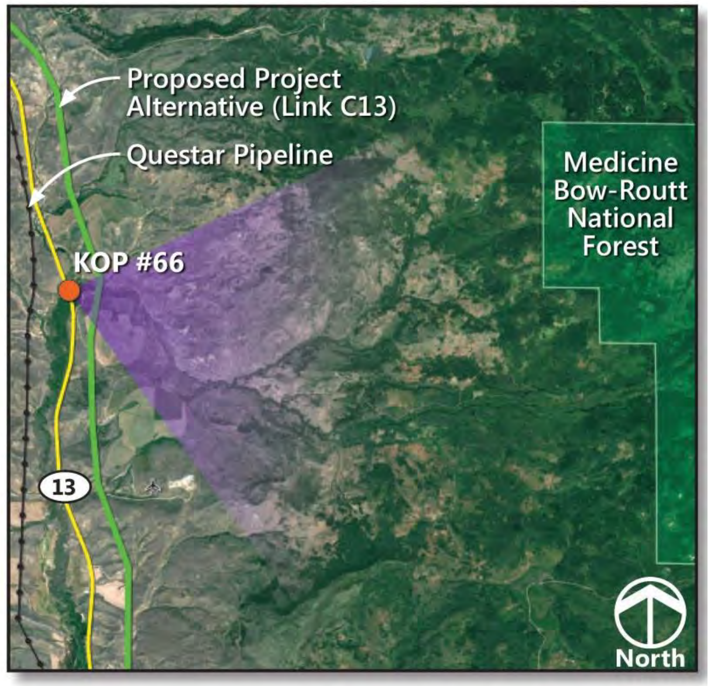
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #52 – Dispersed Residences southwest of Craig ~View B~ Cumulative Effects

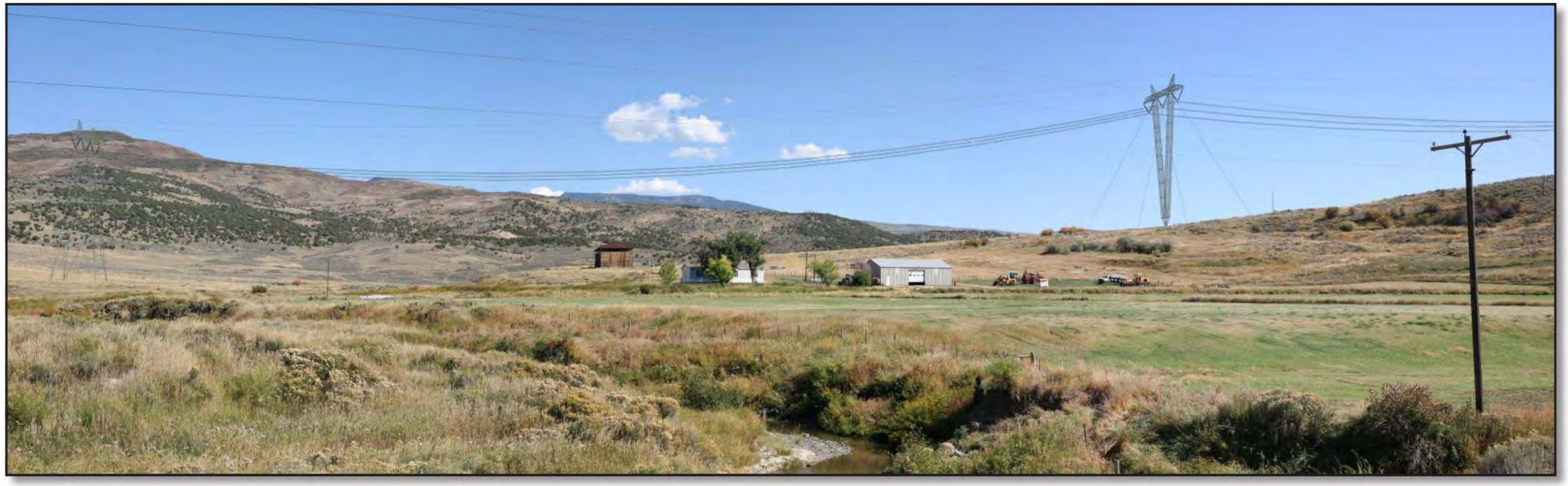
September 2015



Existing Condition – View looking east from residences adjacent to Colorado State Highway 13, approximately 20 miles north of Craig

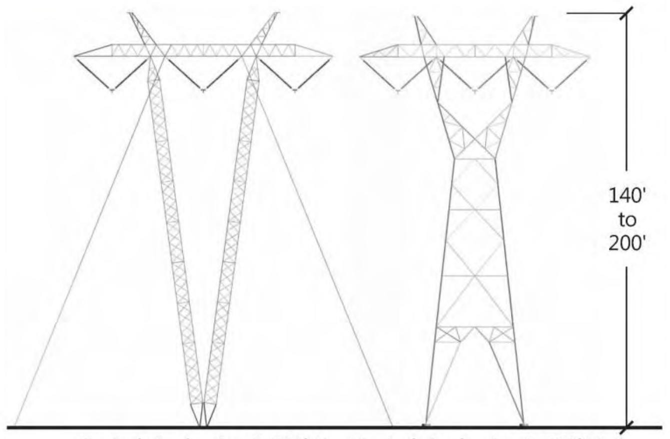

Proposed Project Alternative (Link C13)
Questar Pipeline
Medicine Bow-Routt National Forest
KOP #66
13
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative WYCO-D

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

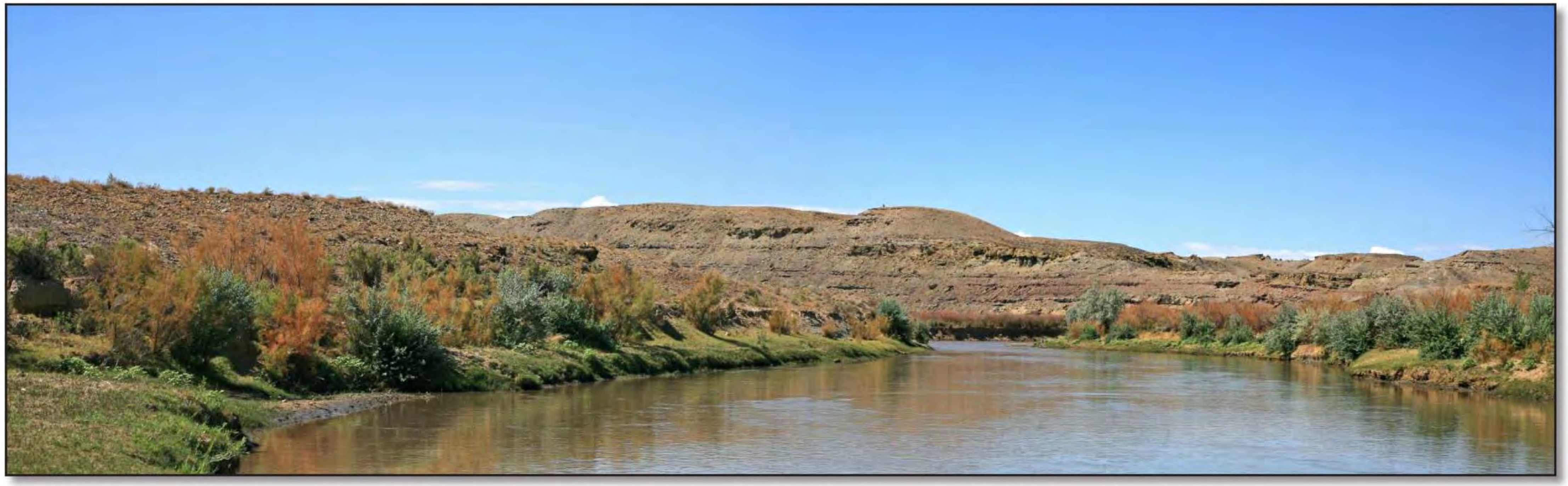
Photo Date and Time: September 27, 2011, 2:14 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 73-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

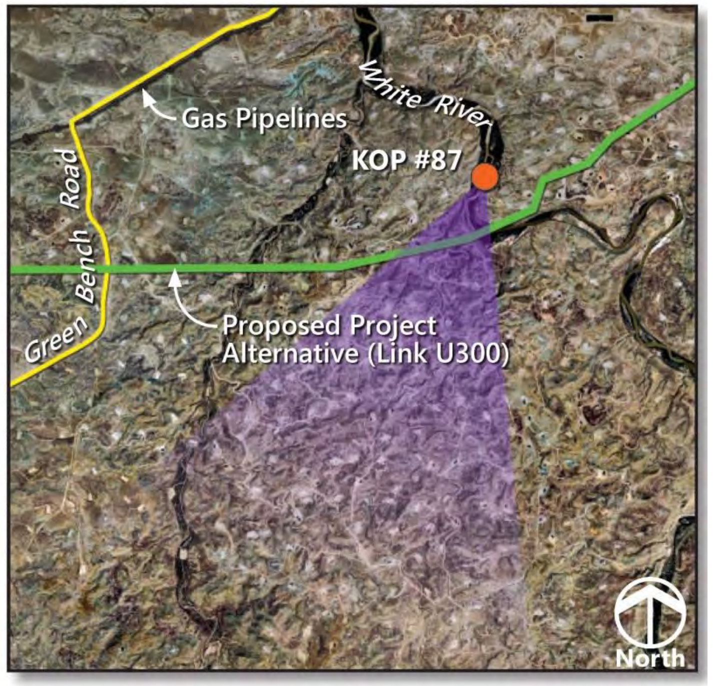
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #66 – Dispersed Residences along Colorado State Highway 13

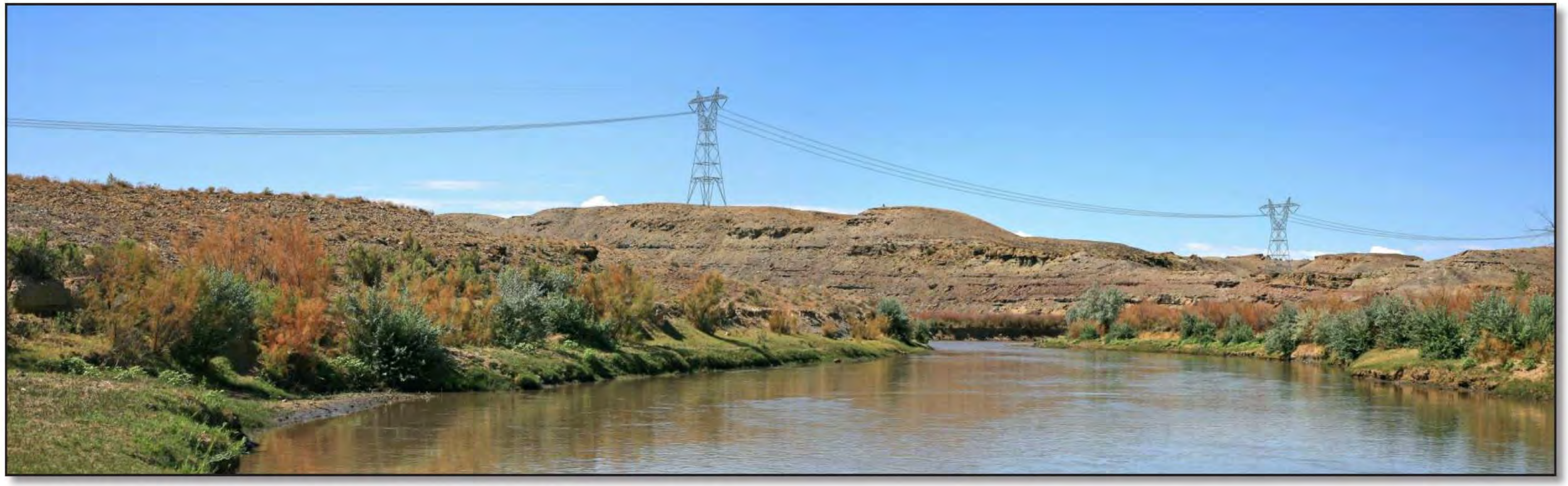
September 2015



Existing Condition – View looking south from the Enron Recreation Area on the White River toward BLM VRM Class III lands

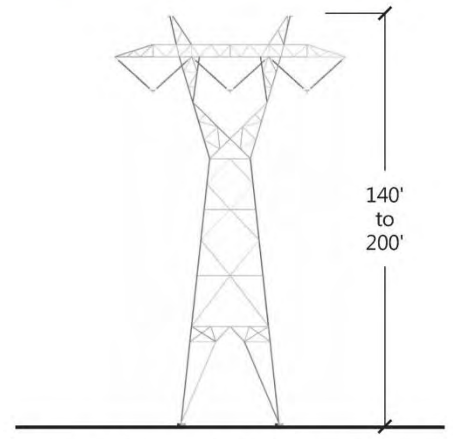


View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

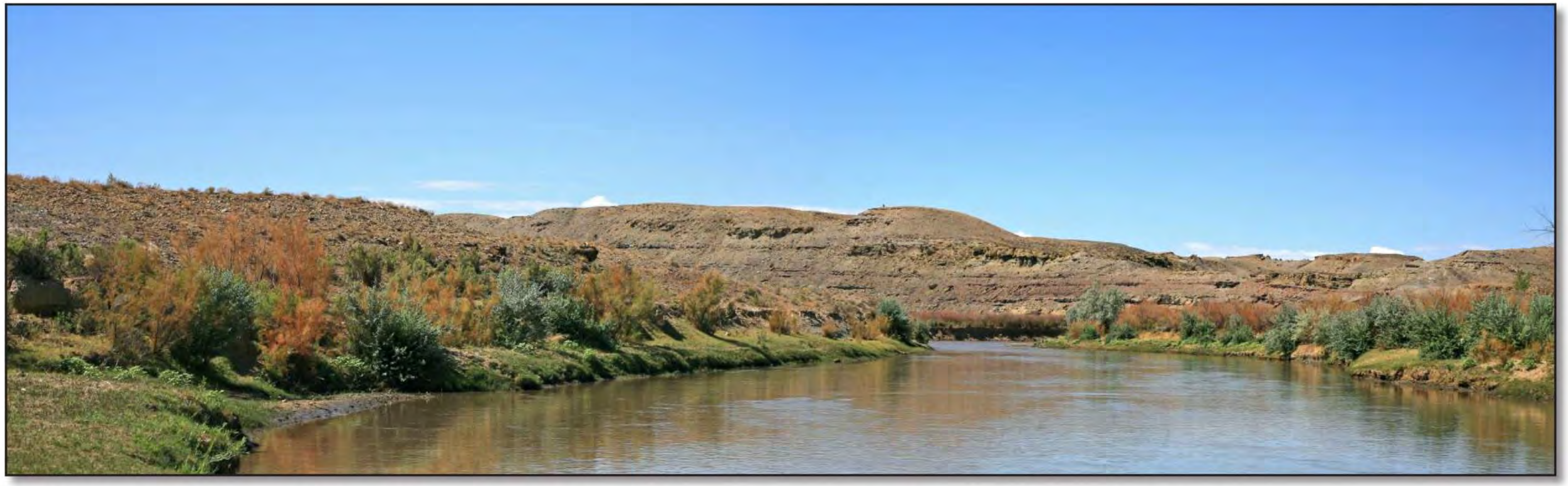
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #87 – Enron Recreation Area (on White River)

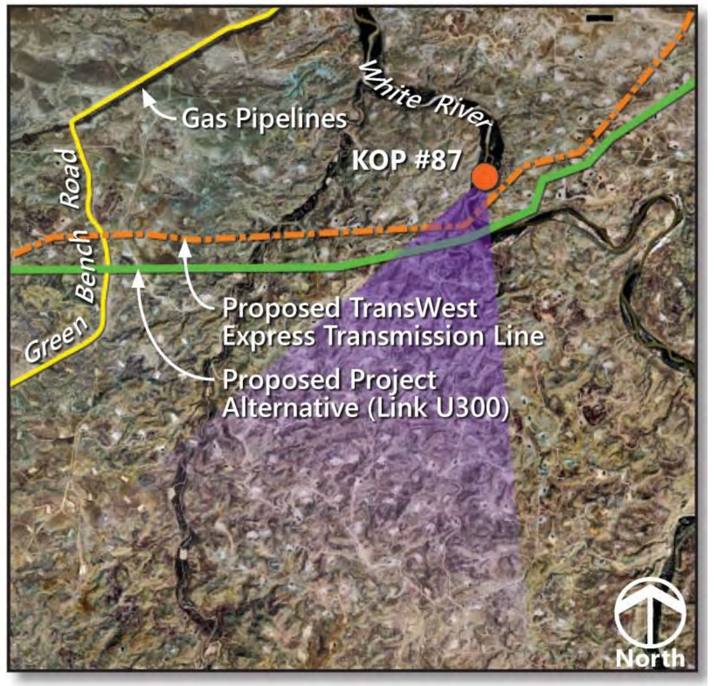
Photo Date and Time: July 25, 2012, 10:10 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 54-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

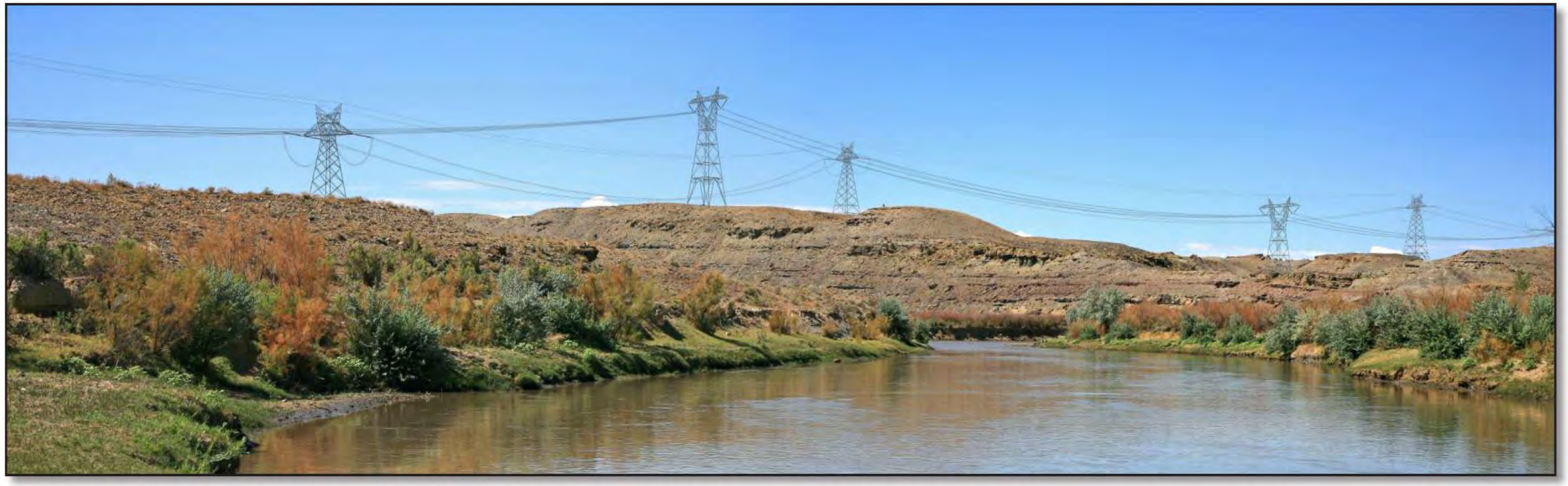
September 2015



Existing Condition – View looking south from the Enron Recreation Area on the White River toward BLM VRM Class III lands

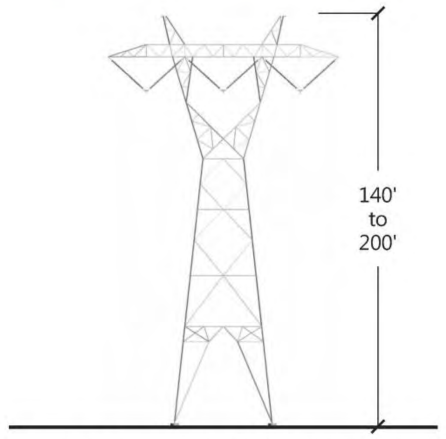

White River
Gas Pipelines
KOP #87
Green Bench Road
Proposed TransWest Express Transmission Line
Proposed Project Alternative (Link U300)
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: July 25, 2012, 10:10 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 54-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

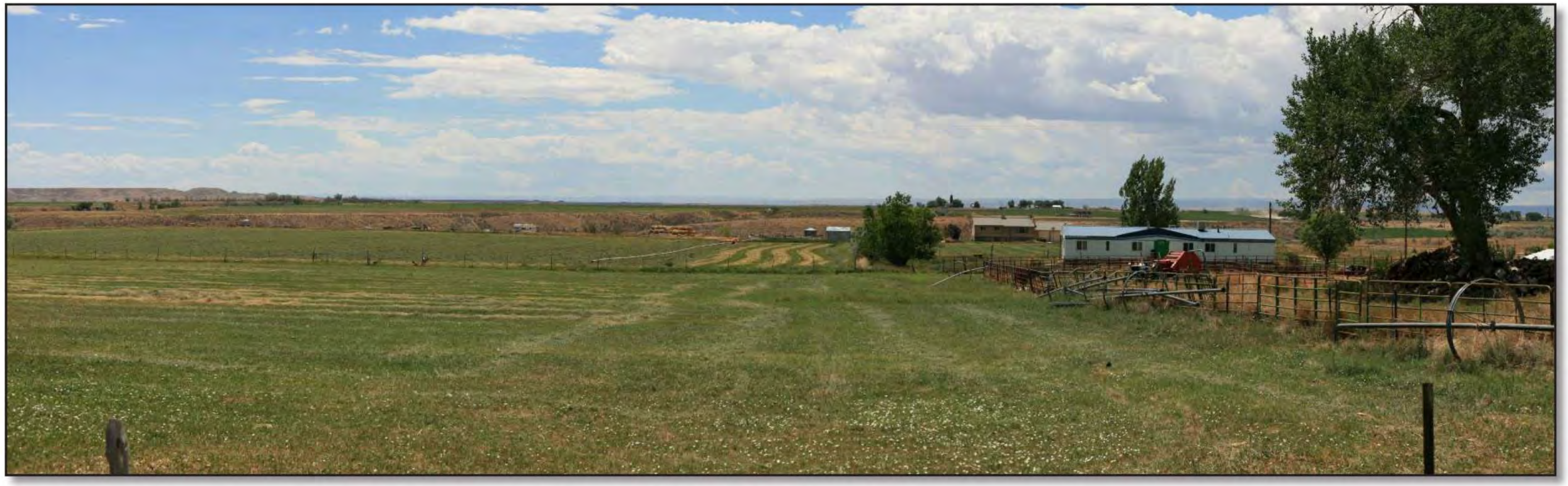
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

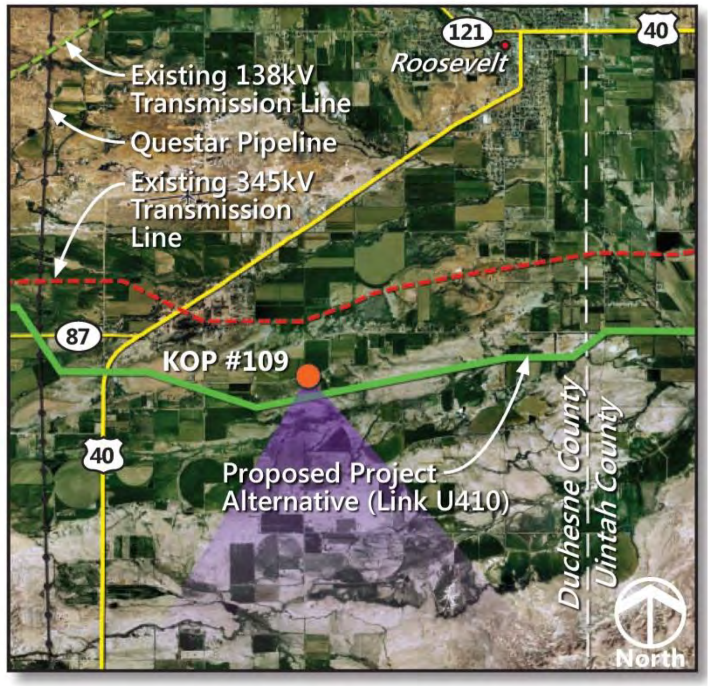
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #87 – Enron Recreation Area (on White River) Cumulative Effects

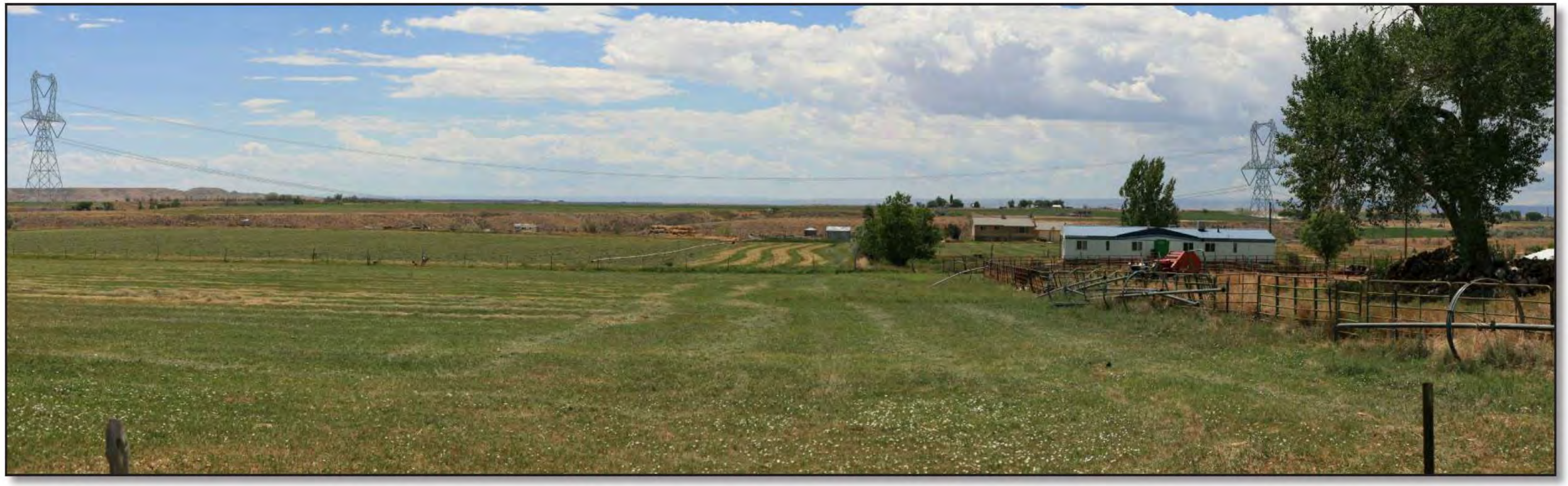
September 2015



Existing Condition – View looking south from dispersed residences south of Roosevelt, Utah

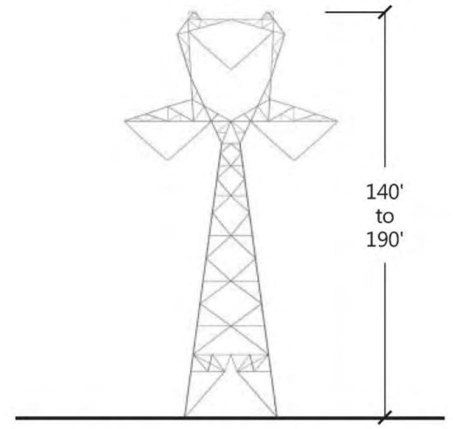

121
40
Roosevelt
Existing 138kV Transmission Line
Questar Pipeline
Existing 345kV Transmission Line
87
KOP #109
40
Proposed Project Alternative (Link U410)
Duchesne County
Uintah County
North

View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternatives COUT-A and COUT-B[1]

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

[1] Note: This view is in vicinity of Series Compensation Station Siting Area F – Roosevelt. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

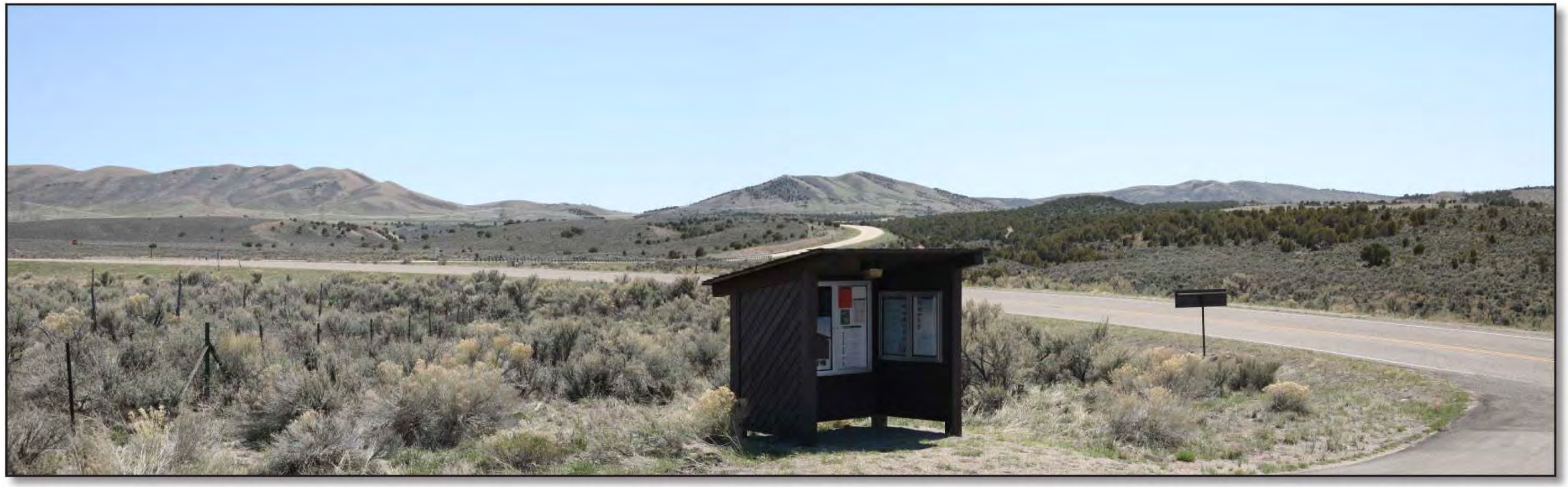
Photo Date and Time: July 25, 2012, 12:53 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 72-degree field of view
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

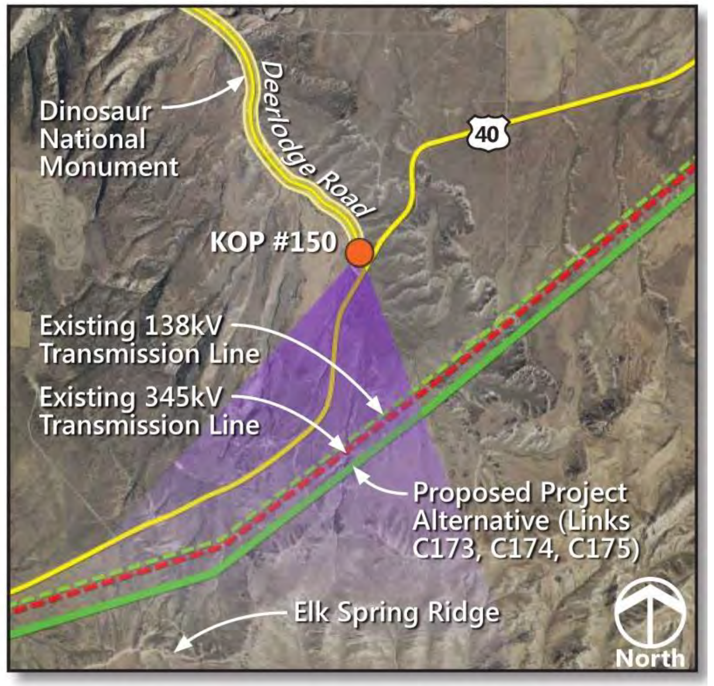
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #109 – Dispersed Residences south of Roosevelt

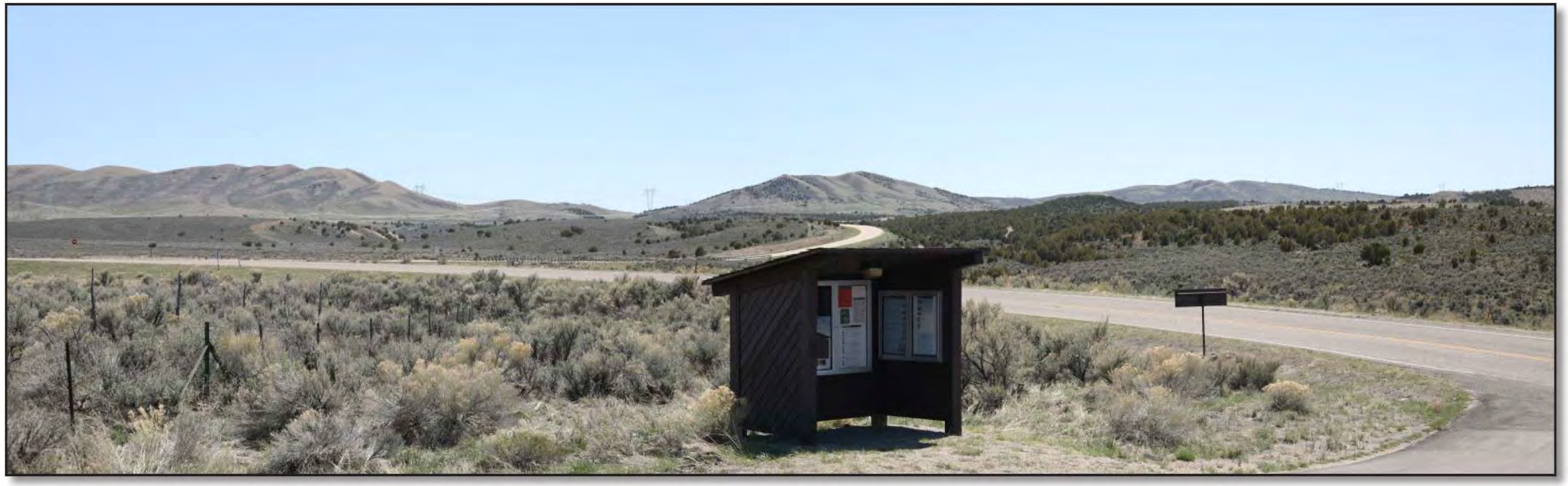
September 2015



Existing Condition – View looking south from Deerlodge Road in Dinosaur National Monument toward Elk Spring Ridge and BLM VRM Class III lands

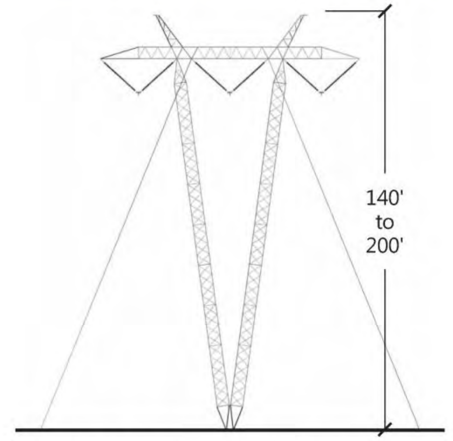

Dinosaur National Monument
Deerlodge Road
40
KOP #150
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Proposed Project Alternative (Links C173, C174, C175)
Elk Spring Ridge
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

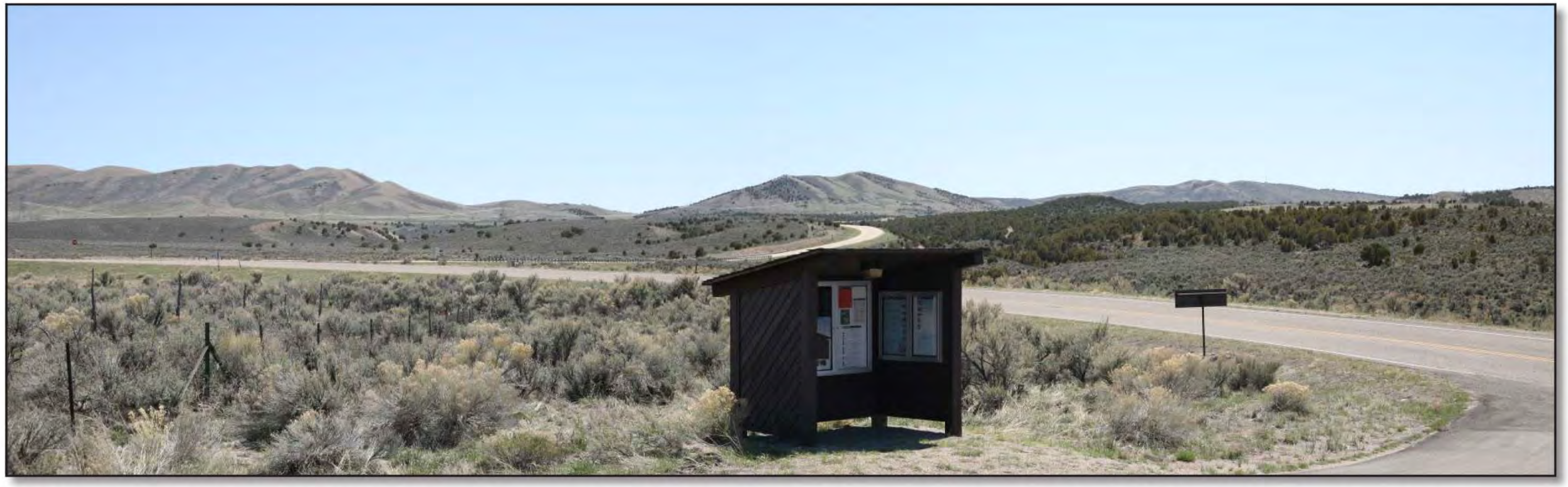
Photo Date and Time: May 02, 2013, 1:40 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

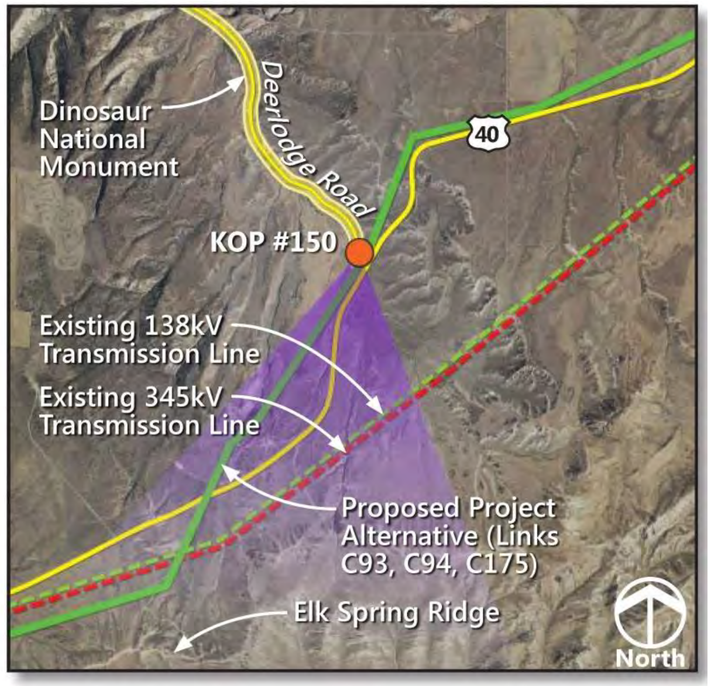
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #150a – Dinosaur National Monument (Deerlodge Road)

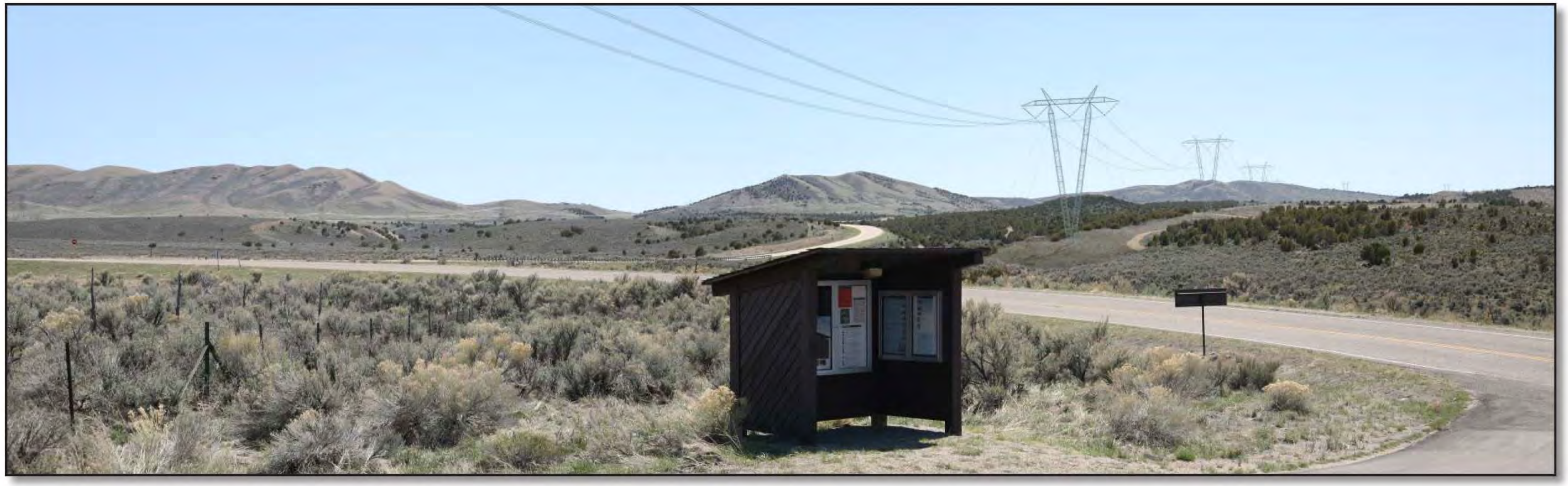
September 2015



Existing Condition – View looking south from Deerlodge Road in Dinosaur National Monument toward Elk Spring Ridge and BLM VRM Class III lands

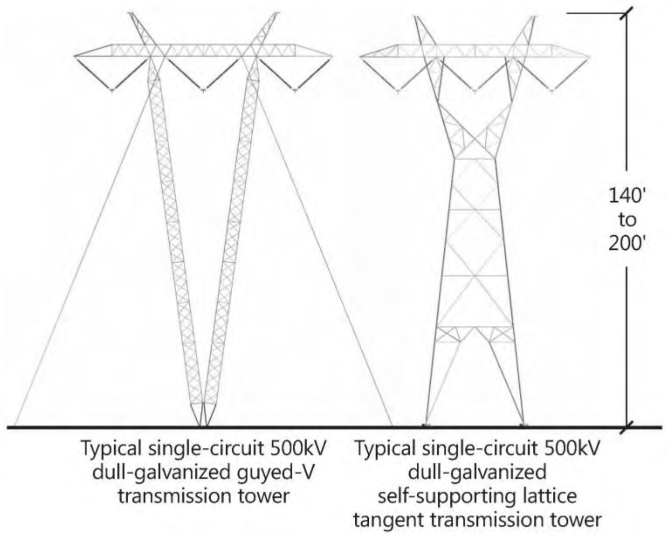

Dinosaur National Monument
Deerlodge Road
40
KOP #150
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Proposed Project Alternative (Links C93, C94, C175)
Elk Spring Ridge
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Deerlodge Road Area Variation 1

500kV TOWER STRUCTURE DIAGRAMS


140' to 200'
Typical single-circuit 500kV dull-galvanized guyed-V transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

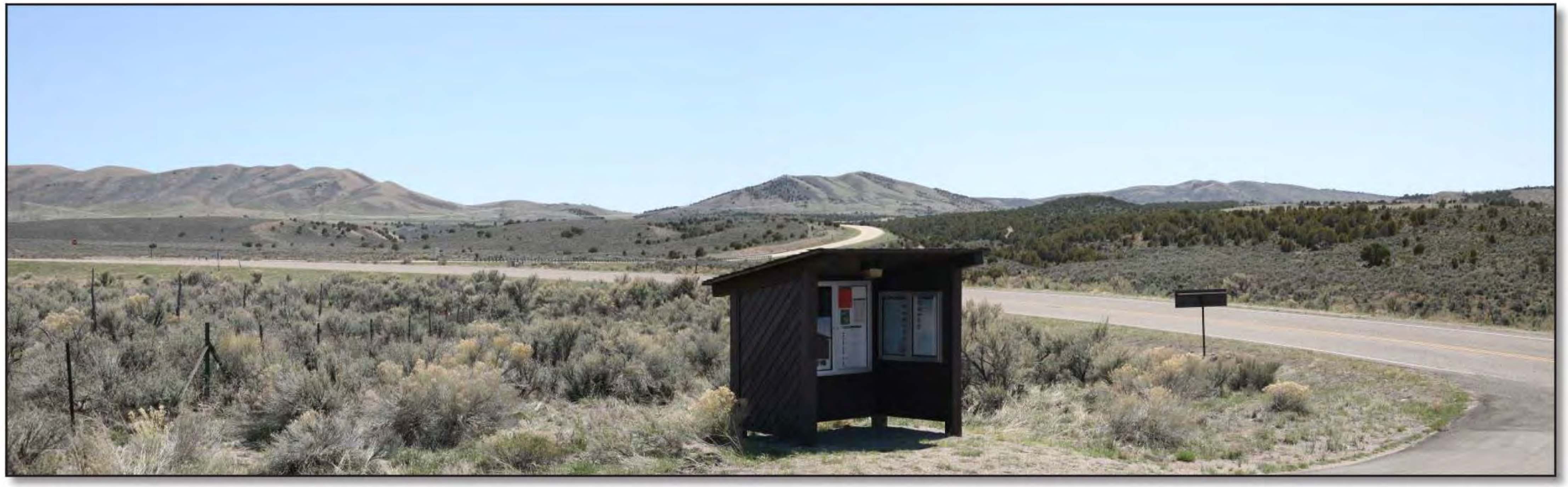
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #150b – Dinosaur National Monument (Deerlodge Road)

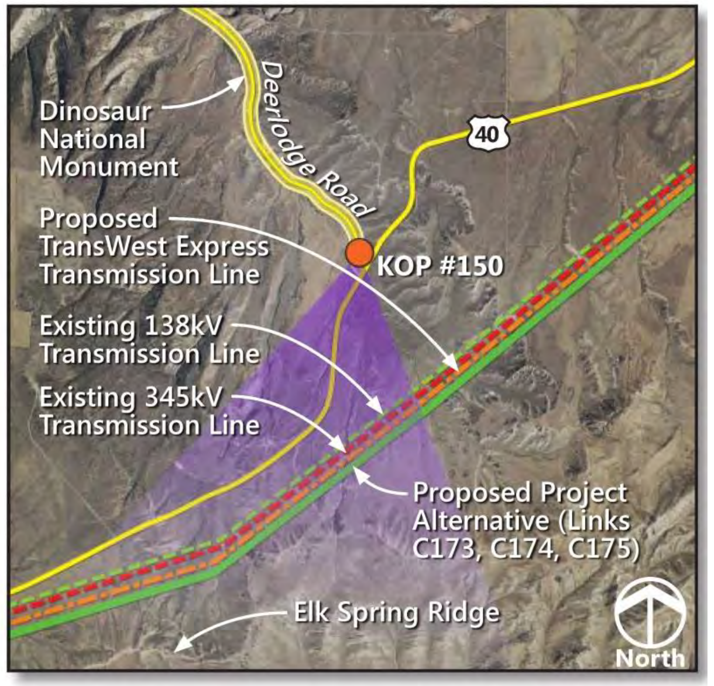
Photo Date and Time: May 02, 2013, 1:40 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

September 2015

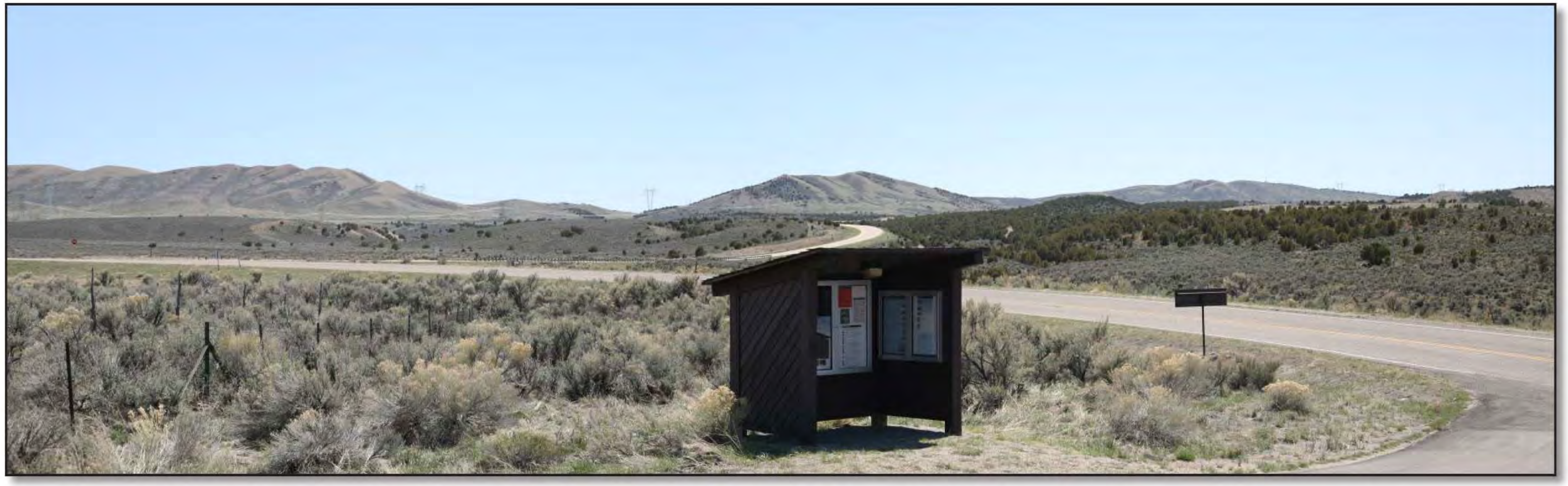


Existing Condition – View looking south from Deerlodge Road in Dinosaur National Monument toward Elk Spring Ridge and BLM VRM Class III lands



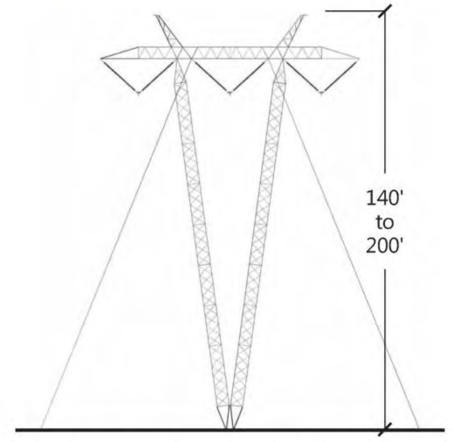
Dinosaur National Monument
Deerlodge Road
40
Proposed TransWest Express Transmission Line
KOP #150
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Proposed Project Alternative (Links C173, C174, C175)
Elk Spring Ridge
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Photo Date and Time: May 02, 2013, 1:40 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

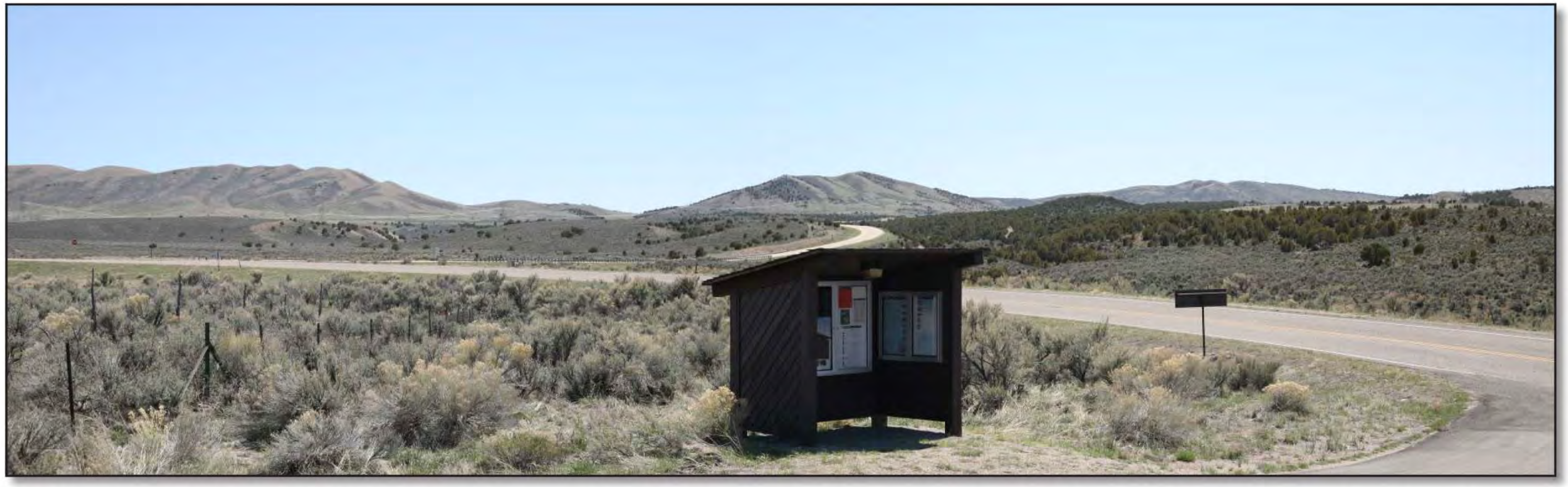
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

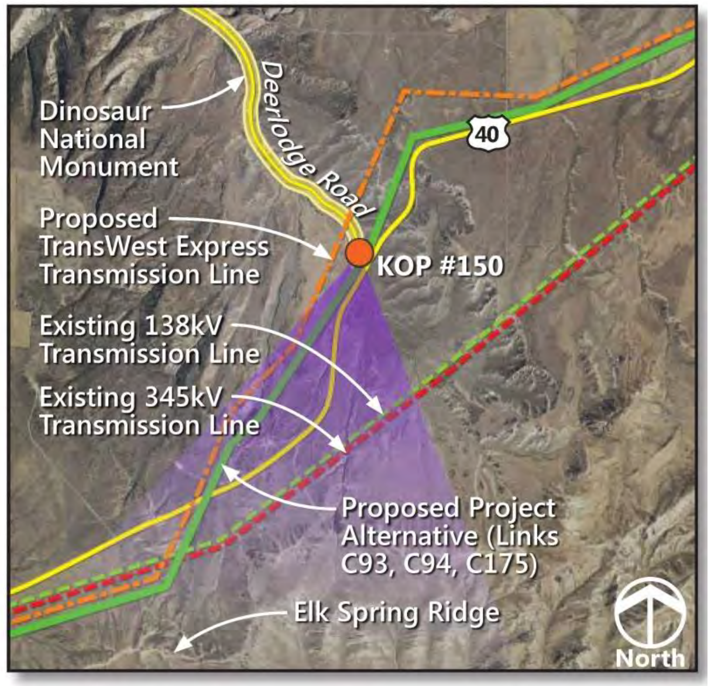
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #150a – Dinosaur National Monument (Deerlodge Road) Cumulative Effects

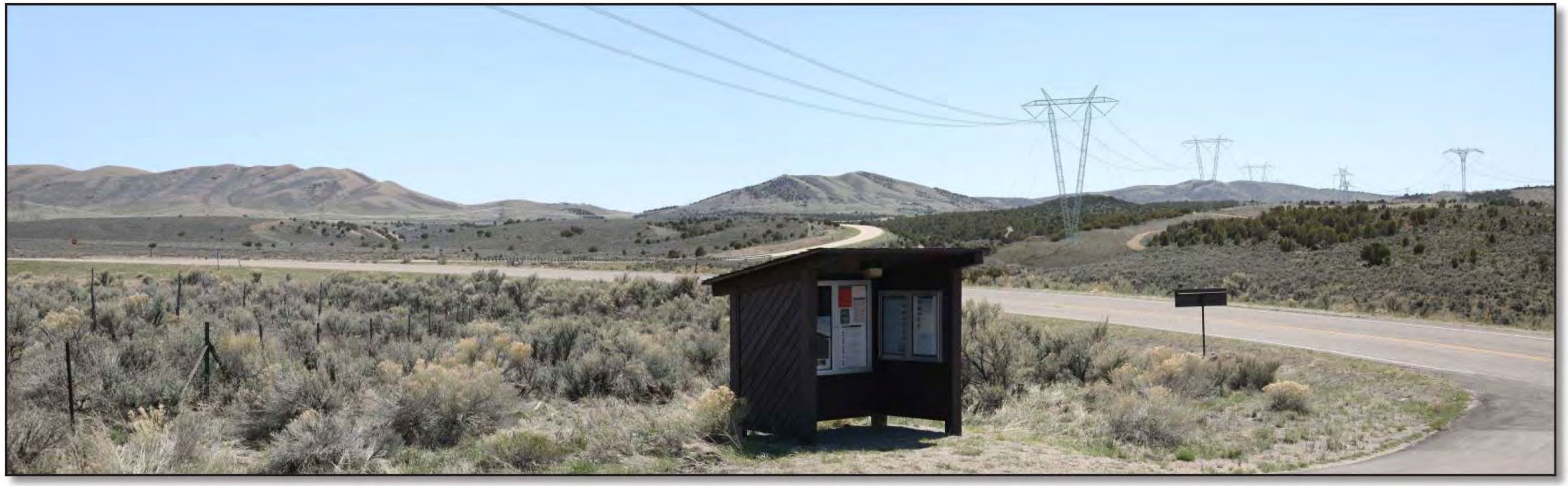
September 2015



Existing Condition – View looking south from Deerlodge Road in Dinosaur National Monument toward Elk Spring Ridge and BLM VRM Class III lands


Dinosaur National Monument
Deerlodge Road
40
Proposed TransWest Express Transmission Line
KOP #150
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Proposed Project Alternative (Links C93, C94, C175)
Elk Spring Ridge
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Deerlodge Road Area Variation 1 and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS

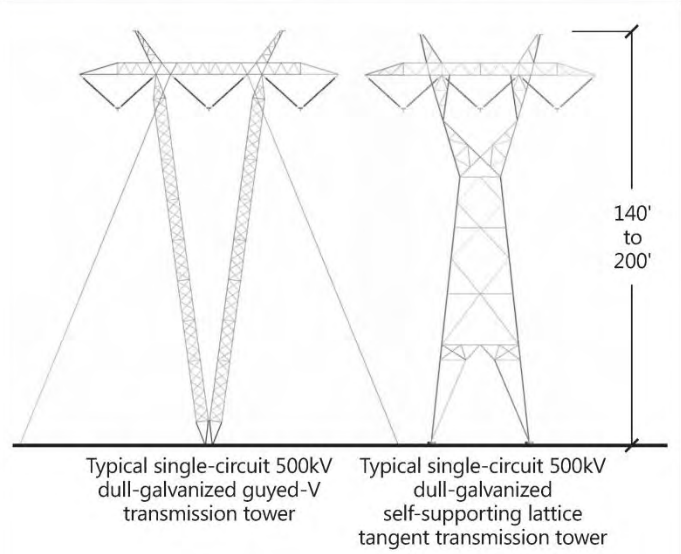

140' to 200'
Typical single-circuit 500kV dull-galvanized guyed-V transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: May 02, 2013, 1:40 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

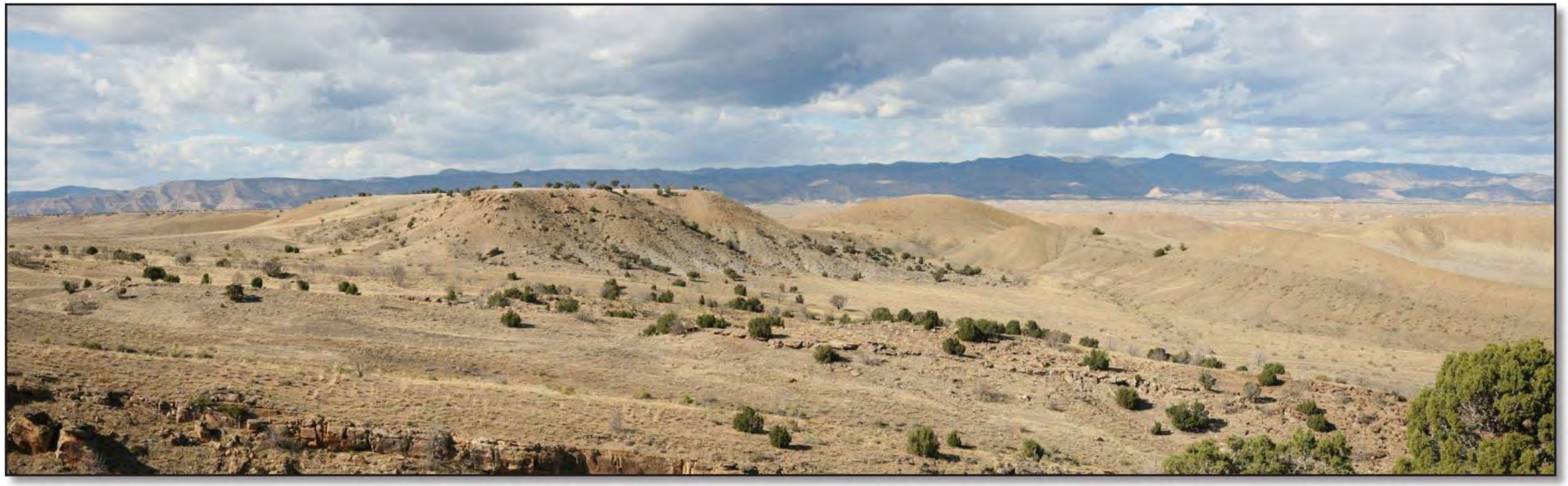
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

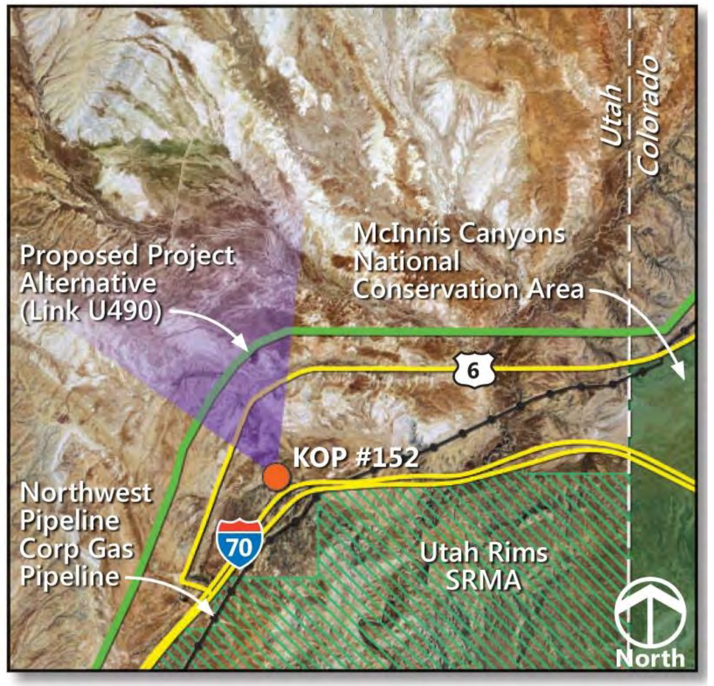
Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #150b – Dinosaur National Monument (Deerlodge Road) Cumulative Effects

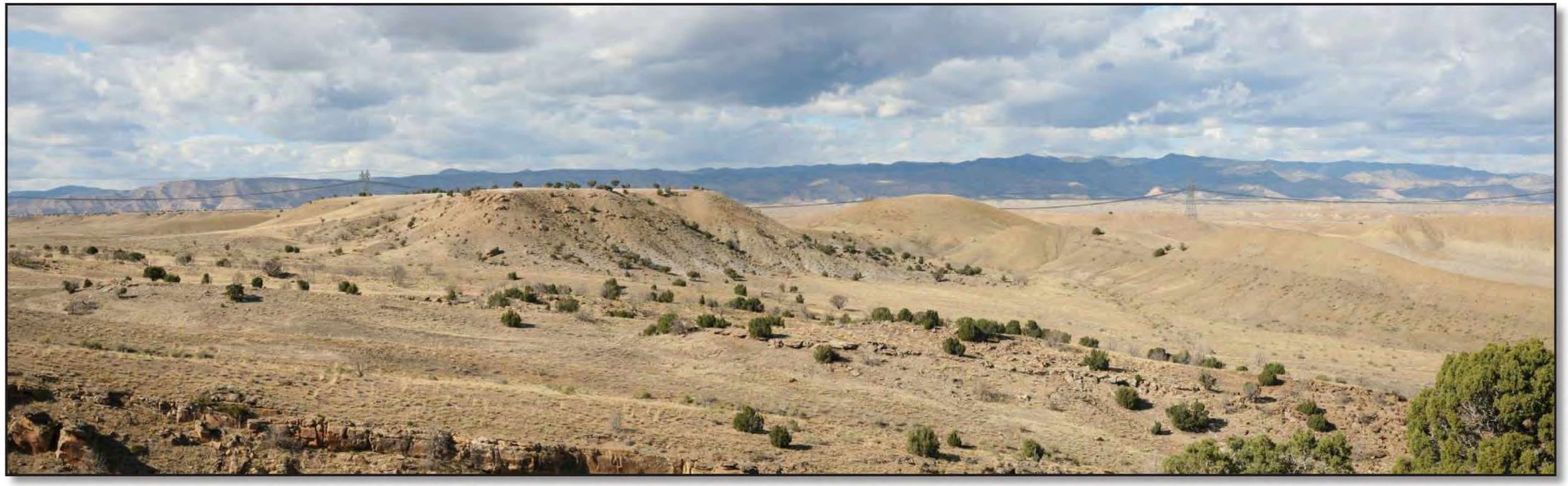
September 2015




Utah
Colorado
Proposed Project Alternative (Link U490)
McInnis Canyons National Conservation Area
6
KOP #152
Northwest Pipeline Corp Gas Pipeline
70
Utah Rims SRMA
North

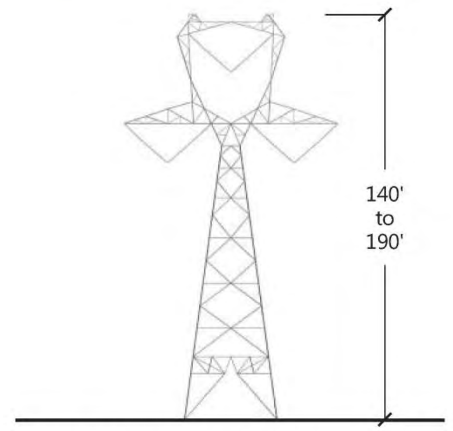
Existing Condition – View looking northwest from the Harley Dome Rest Area Overlook adjacent to the Dinosaur Diamond Scenic Byway (Interstate 70) toward BLM VRM Class III lands

View Location: Approximate distance to proposed transmission line from photo location is 1.3 miles.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

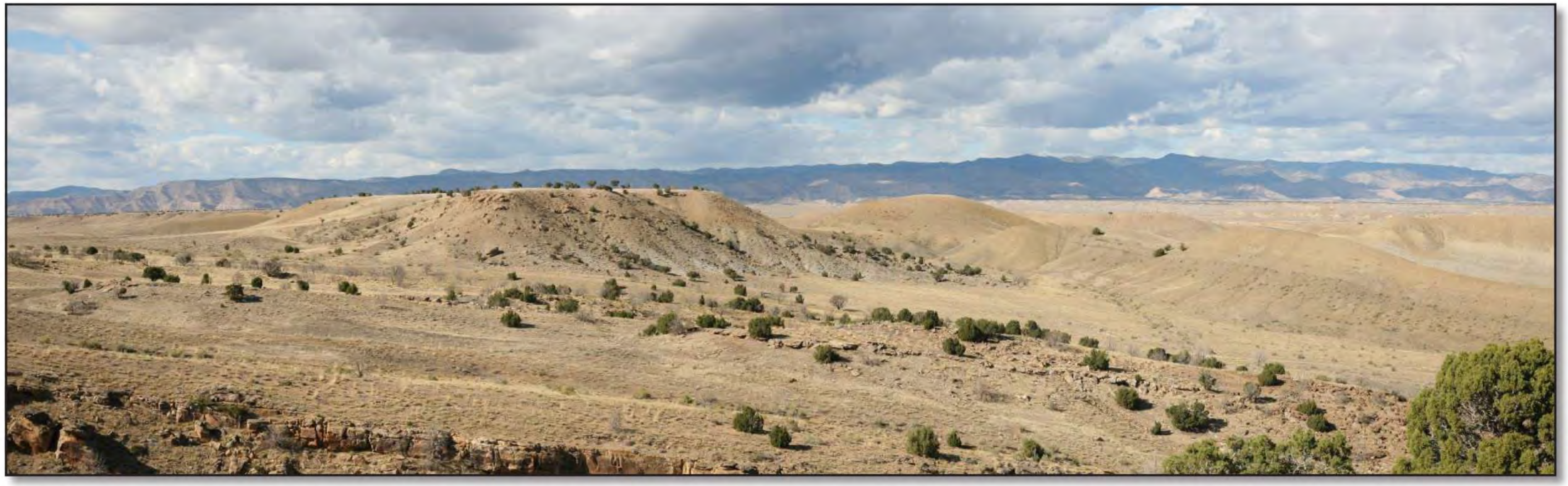
Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: October 11, 2011, 3:31 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 61-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

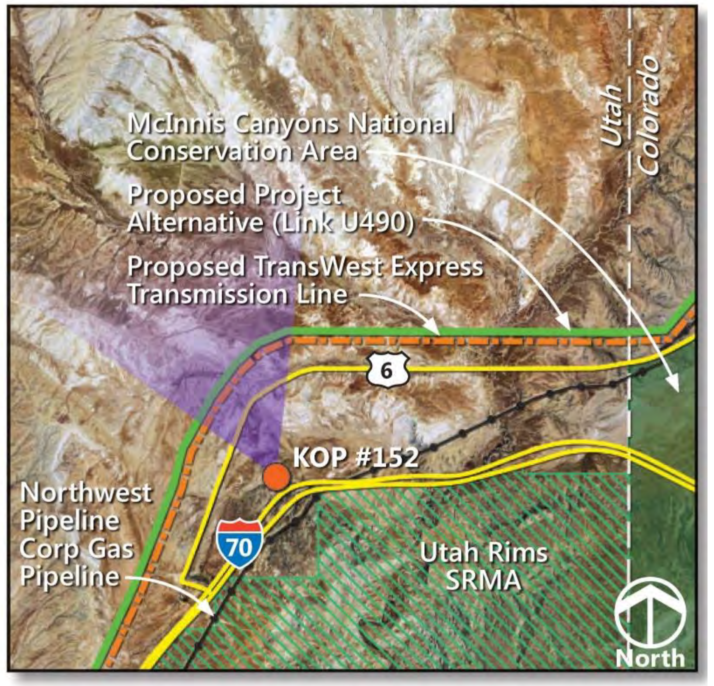
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

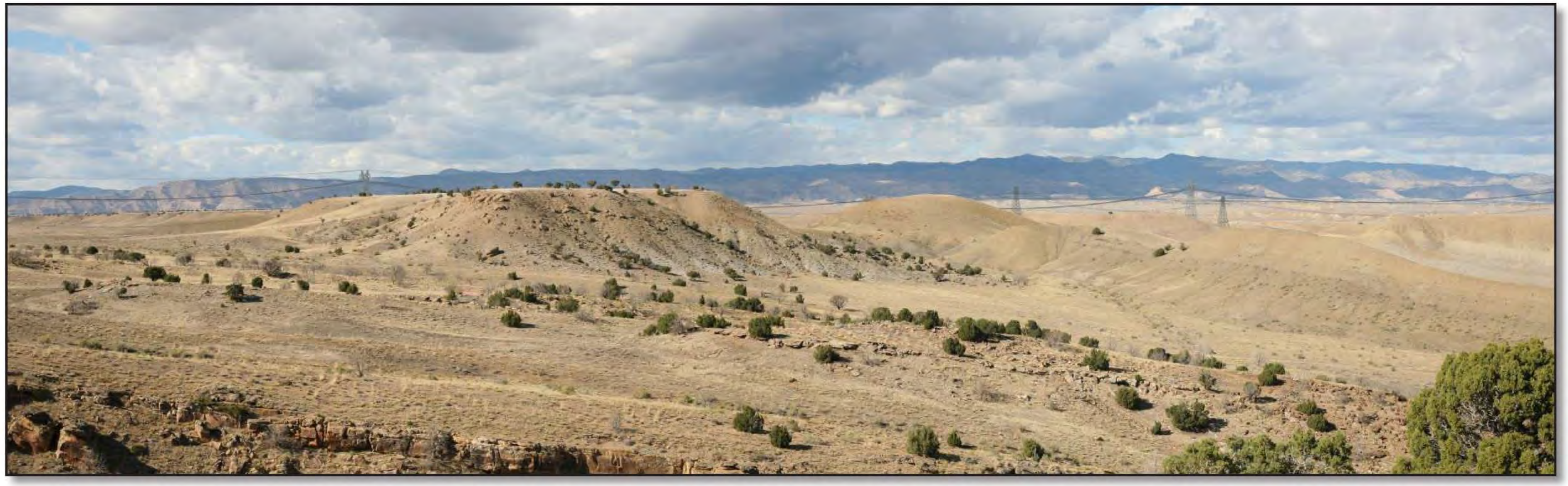
KOP #152 – Interstate 70 Harley Dome Overlook (Dinosaur Diamond Scenic Byway)



Existing Condition – View looking northwest from the Harley Dome Rest Area Overlook adjacent to the Dinosaur Diamond Scenic Byway (Interstate 70) toward BLM VRM Class III lands

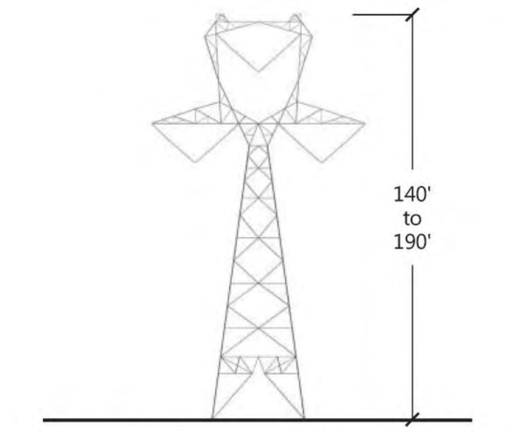

McInnis Canyons National Conservation Area
Proposed Project Alternative (Link U490)
Proposed TransWest Express Transmission Line
Utah
Colorado
6
KOP #152
Northwest Pipeline Corp Gas Pipeline
70
Utah Rims SRMA
North

View Location: Approximate distance to proposed transmission line from photo location is 1.3 miles.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: October 11, 2011, 3:31 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 61-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

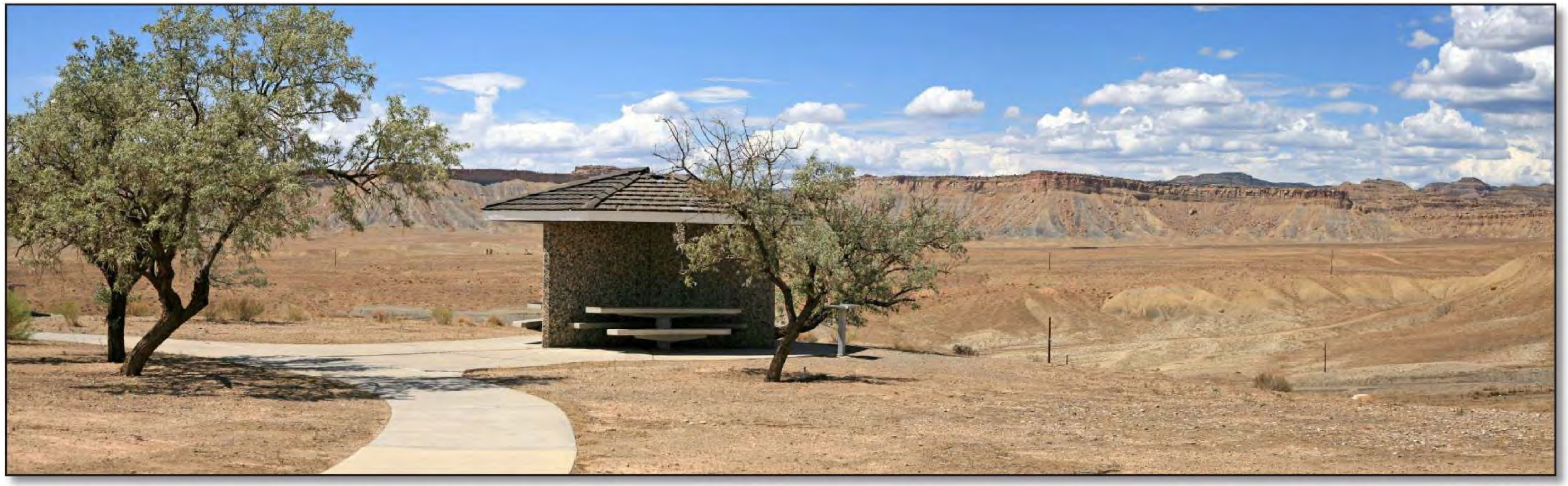
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

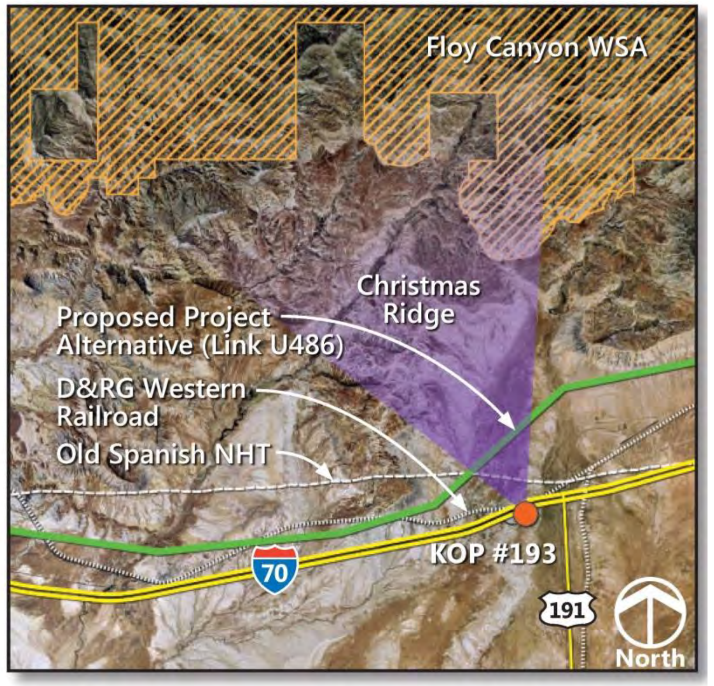
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #152 – Interstate 70 Harley Dome Overlook (Dinosaur Diamond Scenic Byway) Cumulative Effects

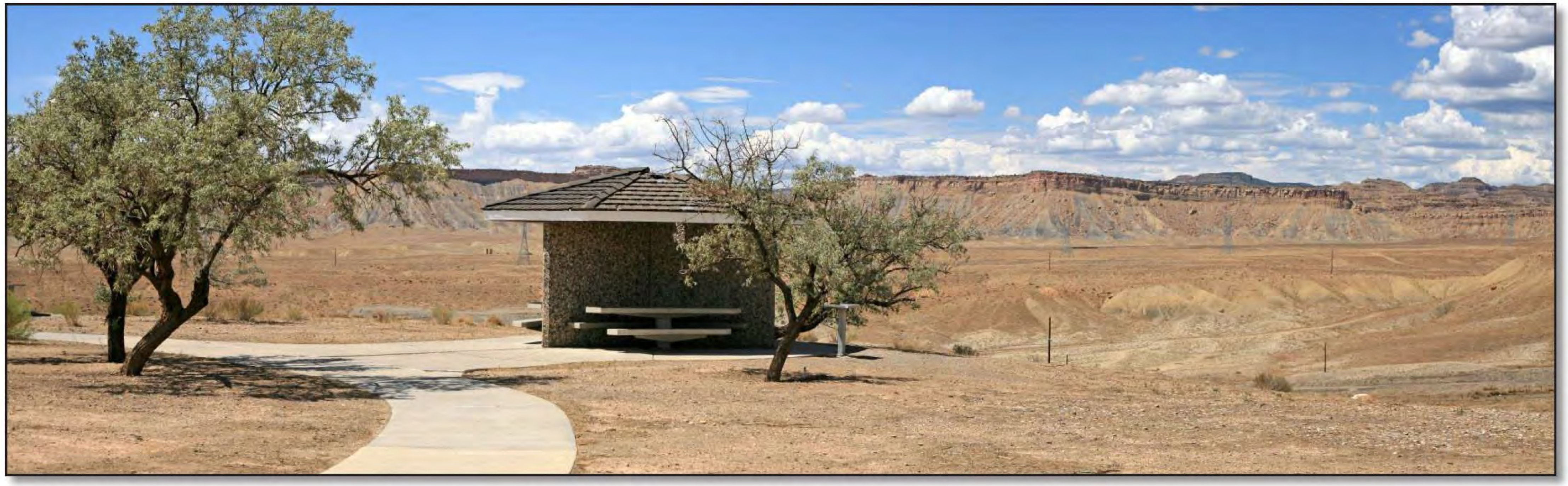
September 2015



Existing Condition – View looking northwest from the Crescent Junction Rest Stop on I-70, part of the Dinosaur Diamond Scenic Byway, toward the Book Cliffs and BLM VRM Class III lands

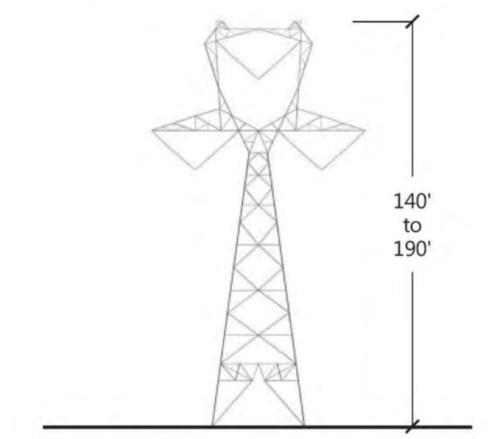


View Location: Approximate distance to proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

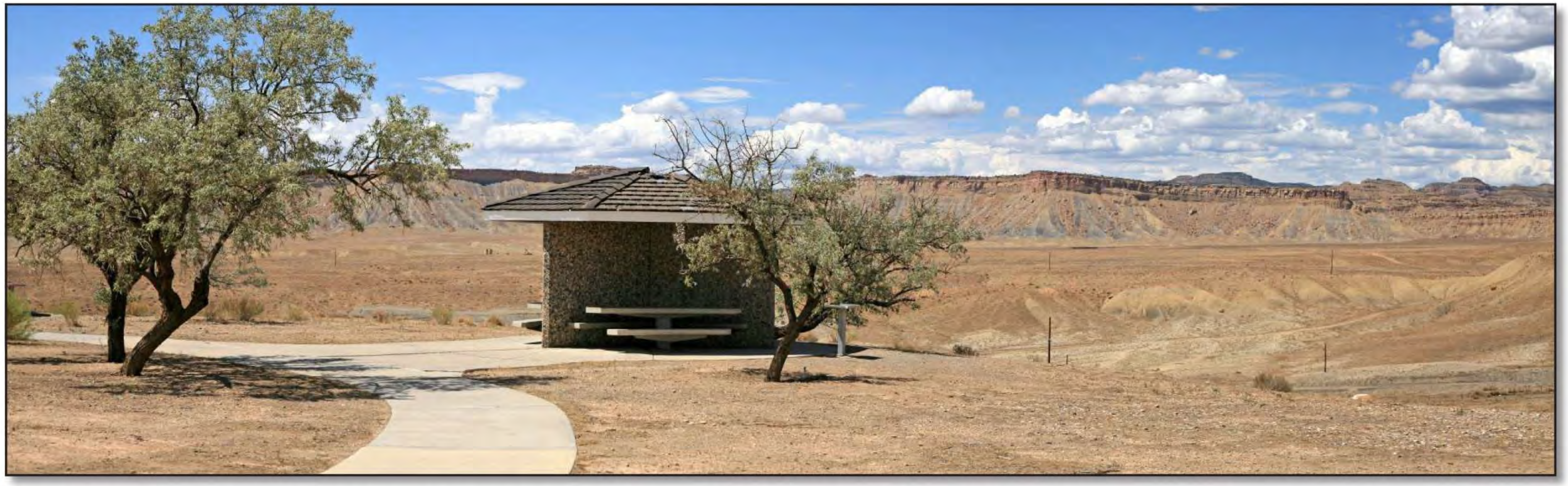
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

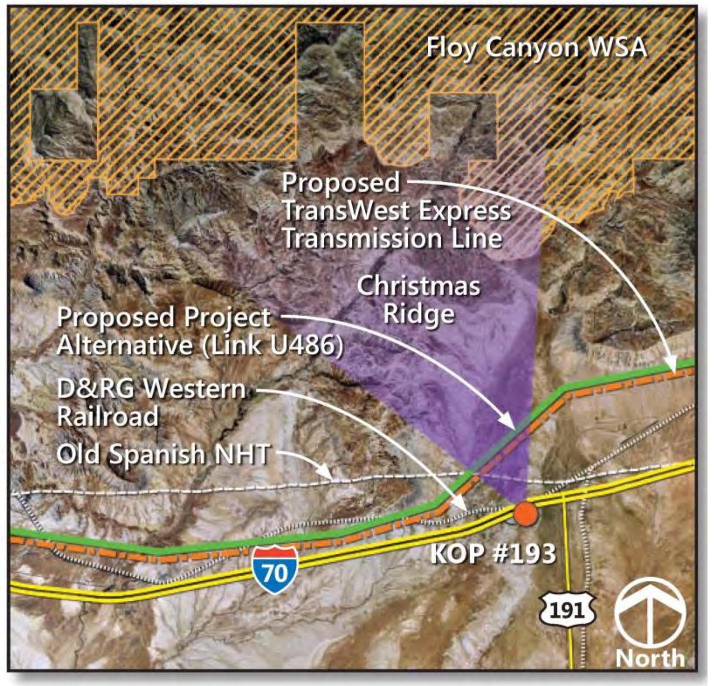
KOP #193 – I-70 Crescent Junction Rest Stop

Photo Date and Time: July 23, 2012, 2:06 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 42-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

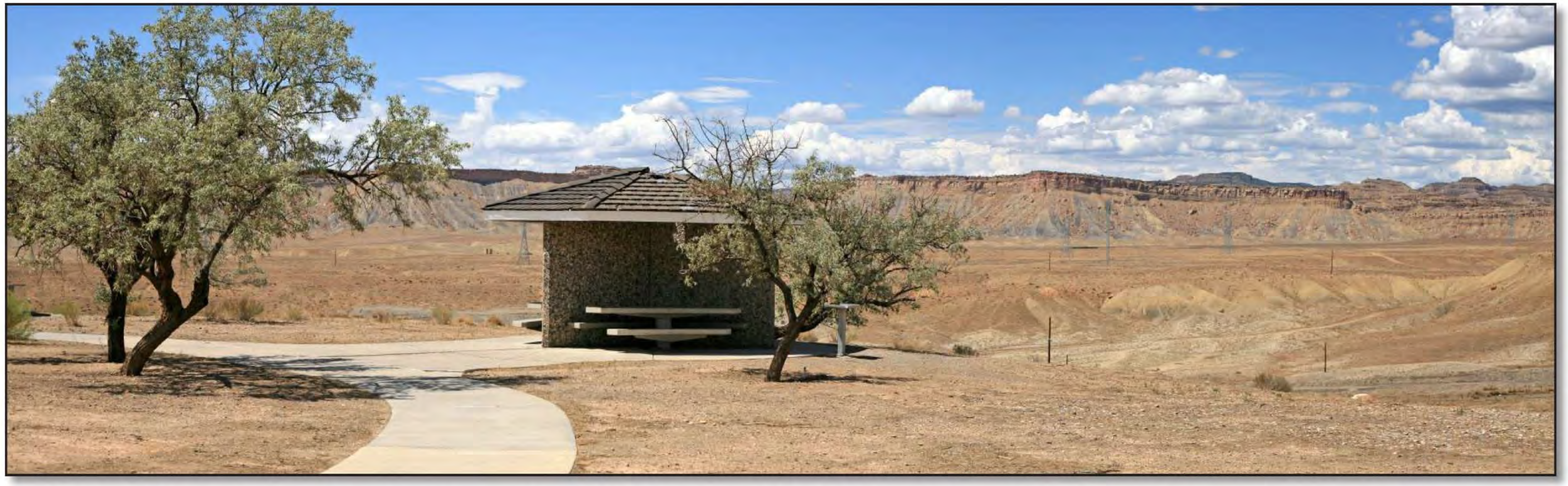
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking northwest from the Crescent Junction Rest Stop on I-70, part of the Dinosaur Diamond Scenic byway, toward the Book Cliffs and BLM VRM Class III lands

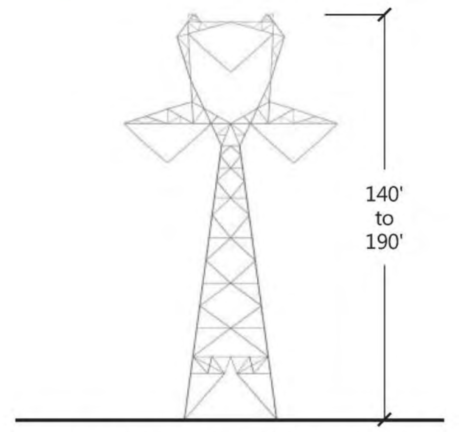

Floy Canyon WSA
Proposed TransWest Express Transmission Line
Christmas Ridge
Proposed Project Alternative (Link U486)
D&RG Western Railroad
Old Spanish NHT
KOP #193
70
191
North

View Location: Approximate distance to proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 2:06 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 42-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

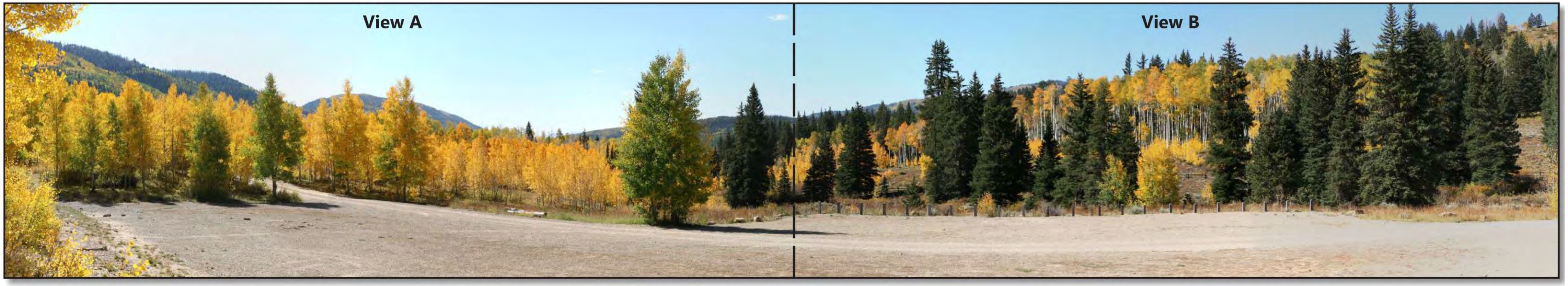
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

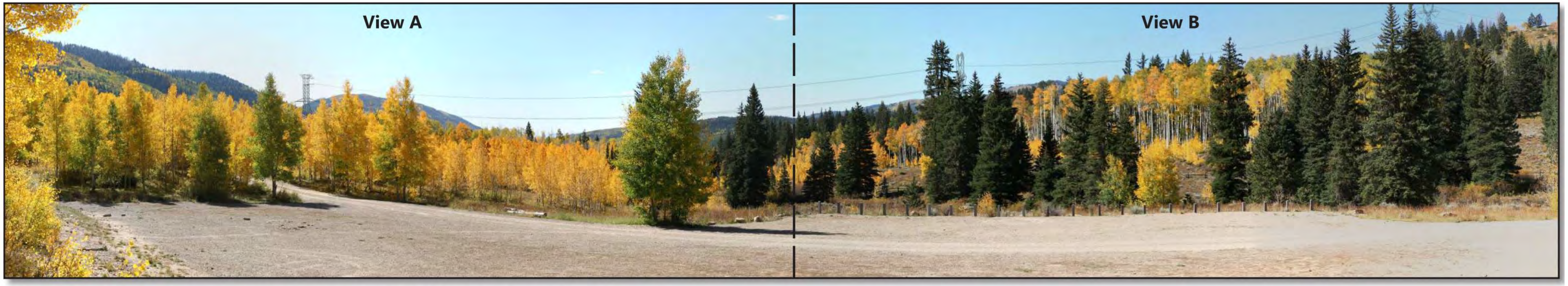
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #193 – I-70 Crescent Junction Rest Stop Cumulative Effects

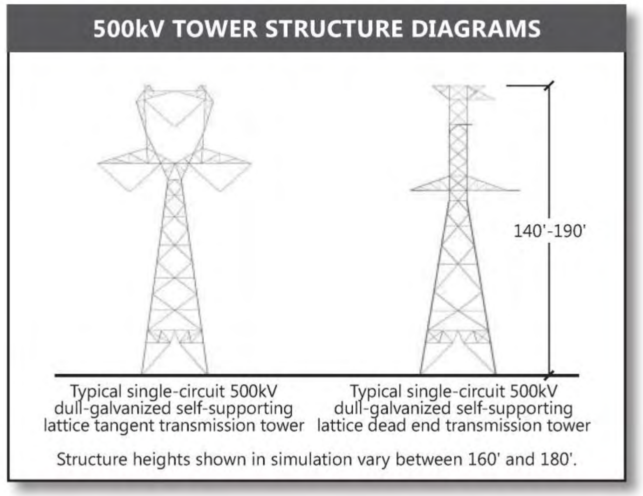
September 2015



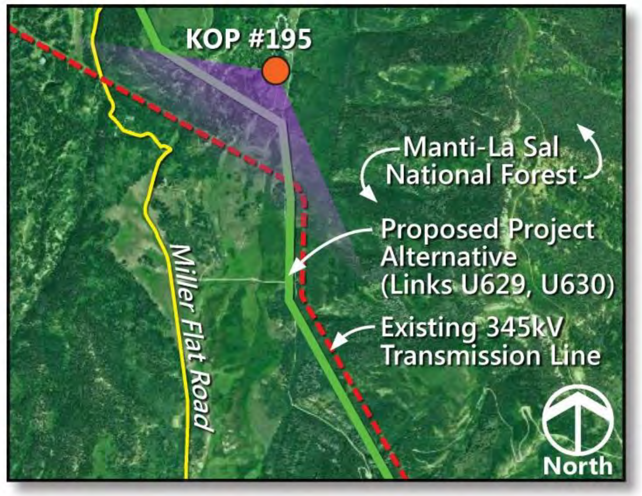
Existing Condition – View looking southwest from Indian Creek Campground in the Manti-La Sal National Forest



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I


500kV TOWER STRUCTURE DIAGRAMS
140'-190'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice dead end transmission tower

Structure heights shown in simulation vary between 160' and 180'.


KOP #195
Manti-La Sal National Forest
Proposed Project Alternative (Links U629, U630)
Existing 345kV Transmission Line
Miller Flat Road
North

View Location:
Approximate distance to proposed transmission line from photo location is 0.3 mile.

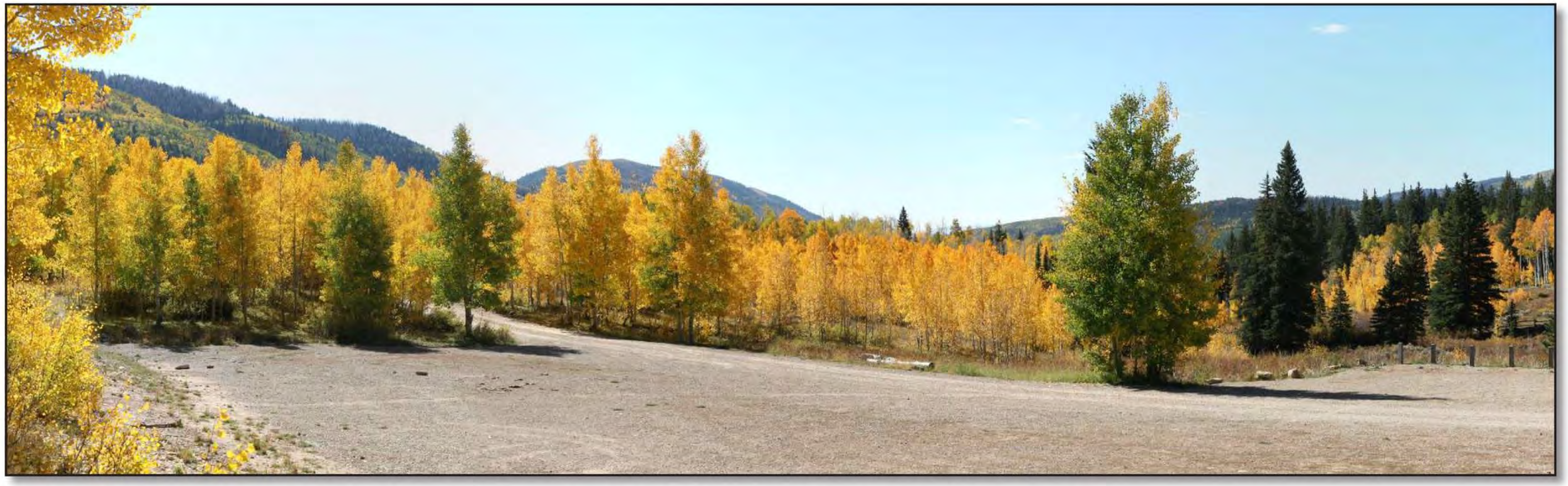
Photo Date and Time: September 27, 2011, 11:56 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 135-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

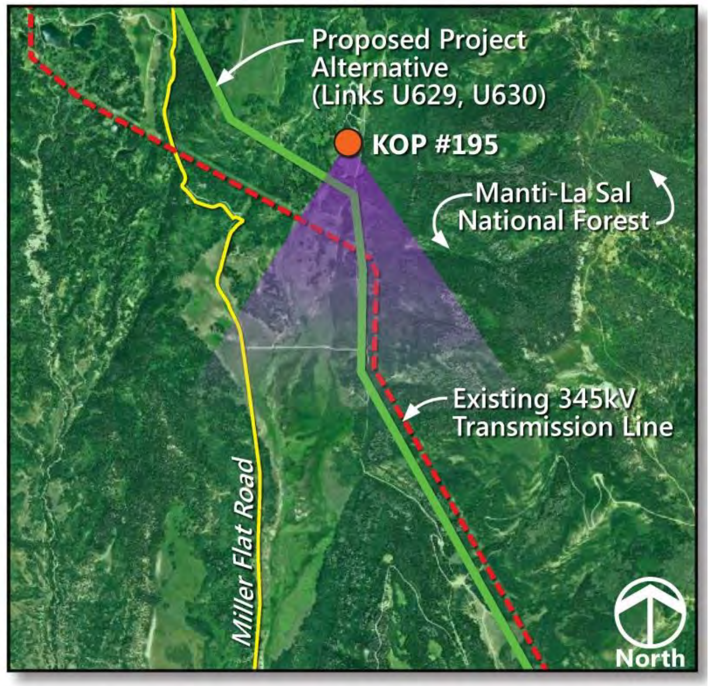
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #195 – Indian Creek Campground

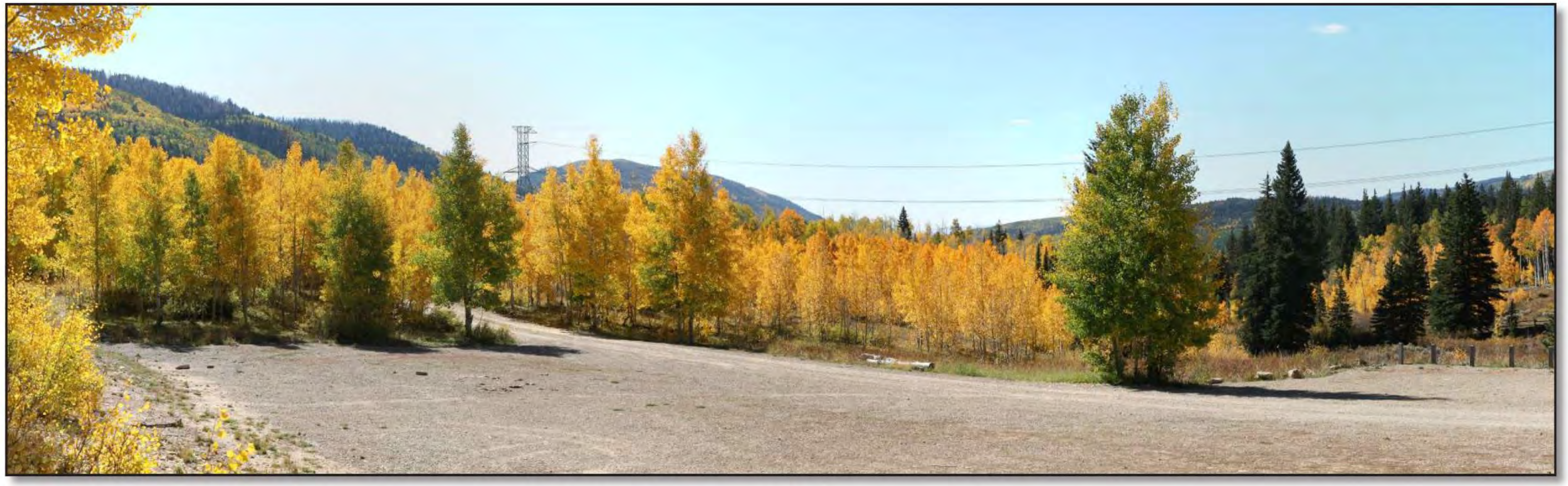
September 2015



Existing Condition – View looking southwest from Indian Creek Campground in the Manti-La Sal National Forest

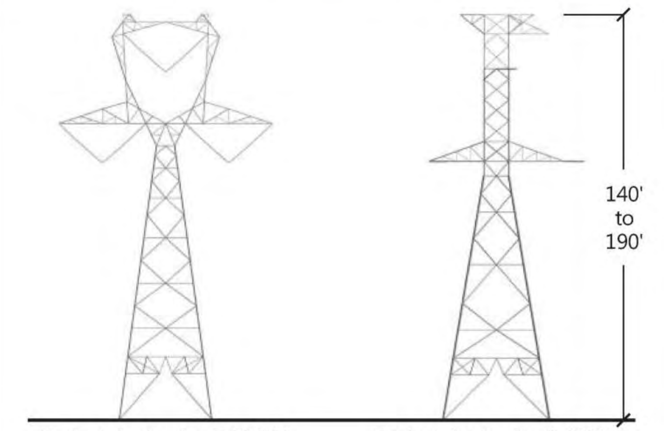

Proposed Project Alternative (Links U629, U630)
KOP #195
Manti-La Sal National Forest
Existing 345kV Transmission Line
Miller Flat Road
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

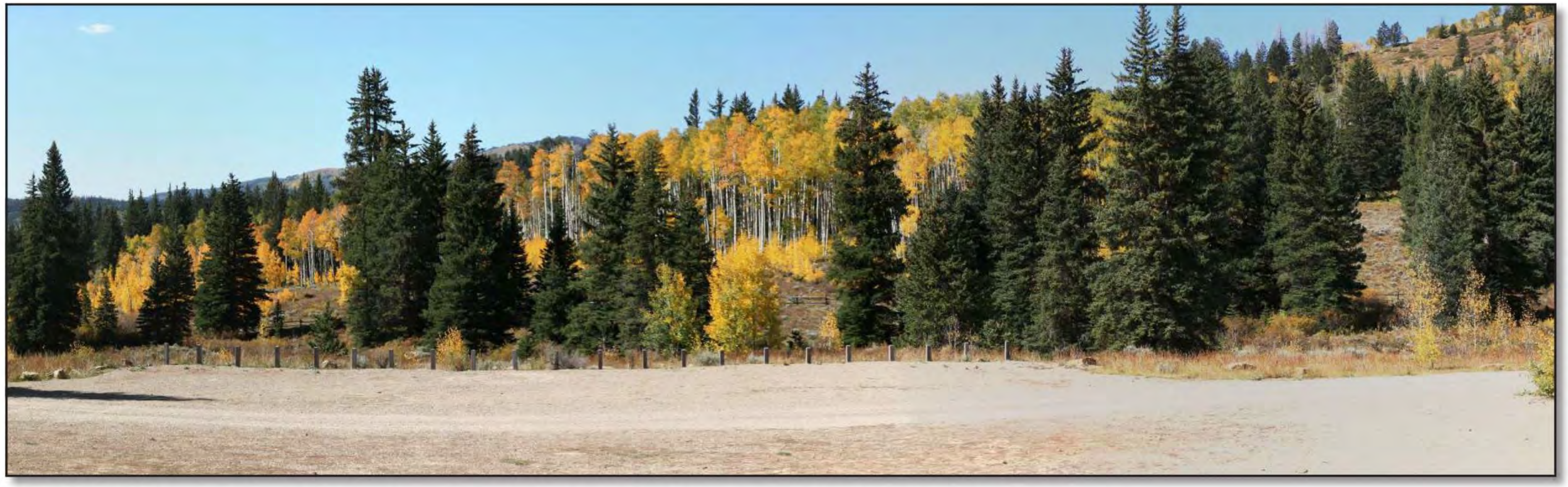
Photo Date and Time: September 27, 2011, 11:56 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 78-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

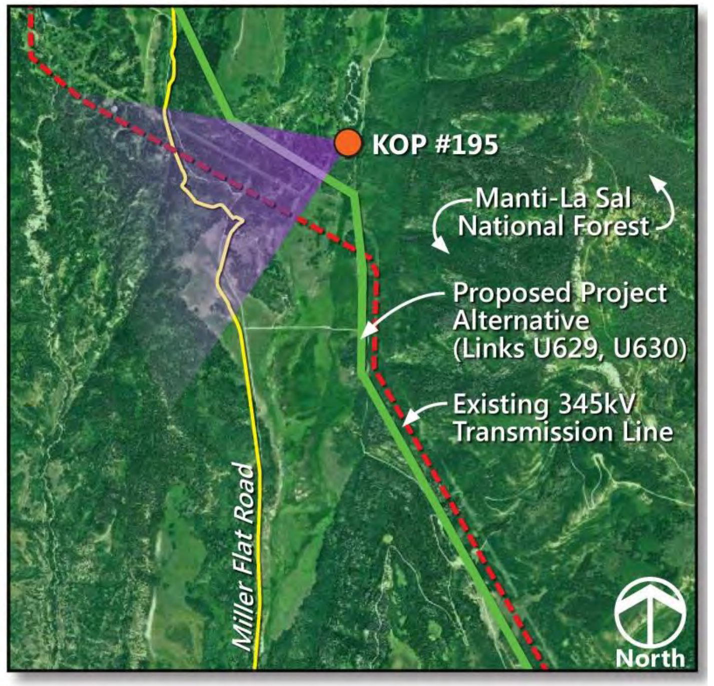
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #195 – Indian Creek Campground ~View A~

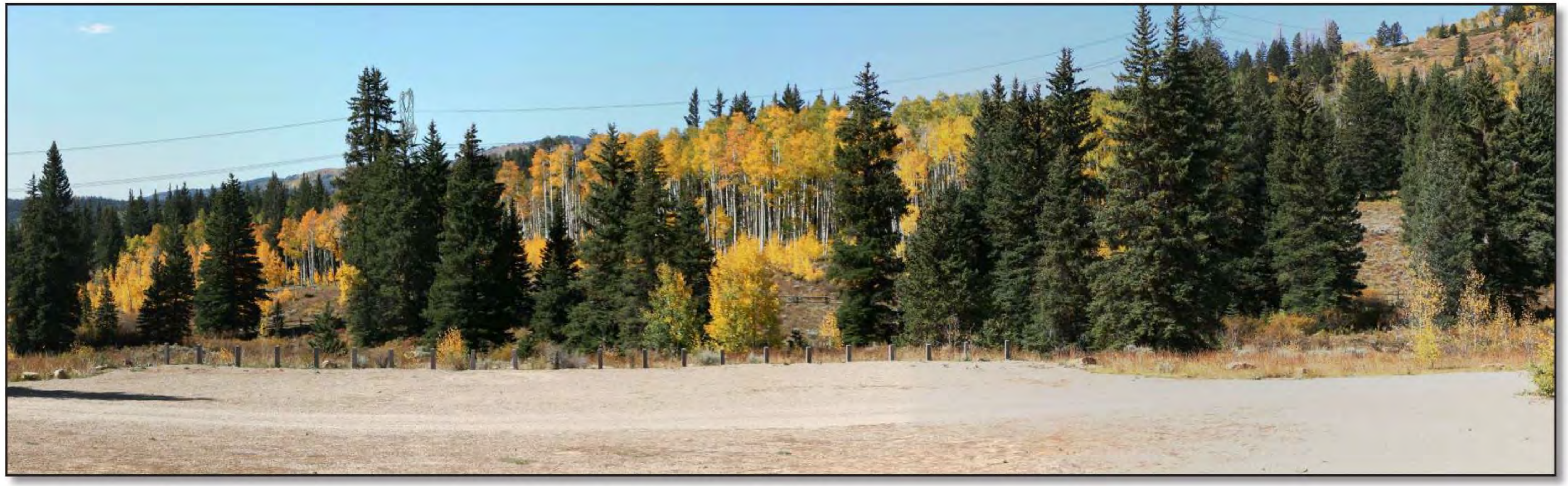
September 2015



Existing Condition – View looking southwest from Indian Creek Campground in the Manti-La Sal National Forest

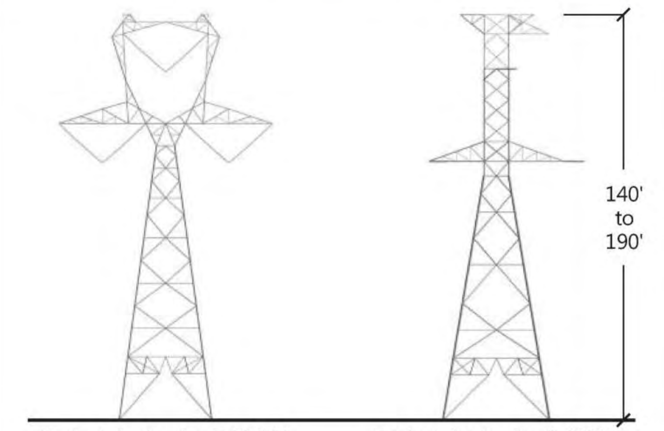

KOP #195
Manti-La Sal National Forest
Proposed Project Alternative (Links U629, U630)
Existing 345kV Transmission Line
Miller Flat Road
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

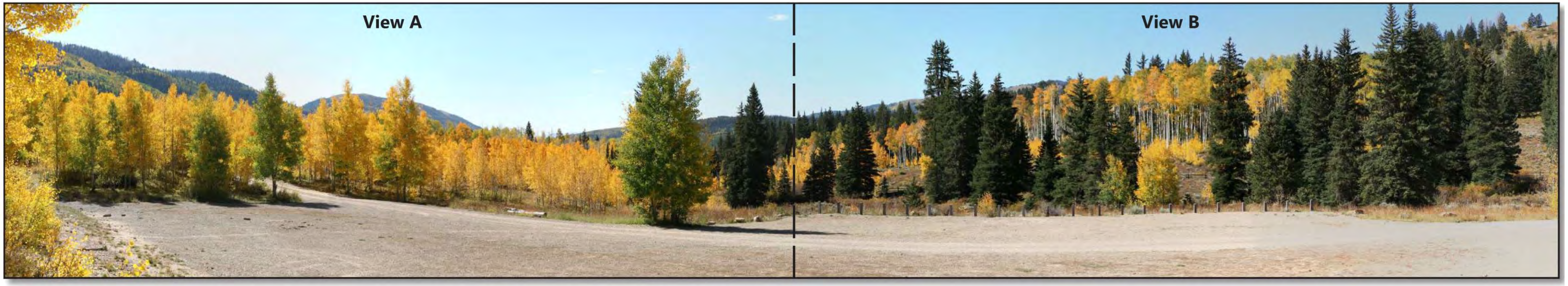
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #195 – Indian Creek Campground ~View B~

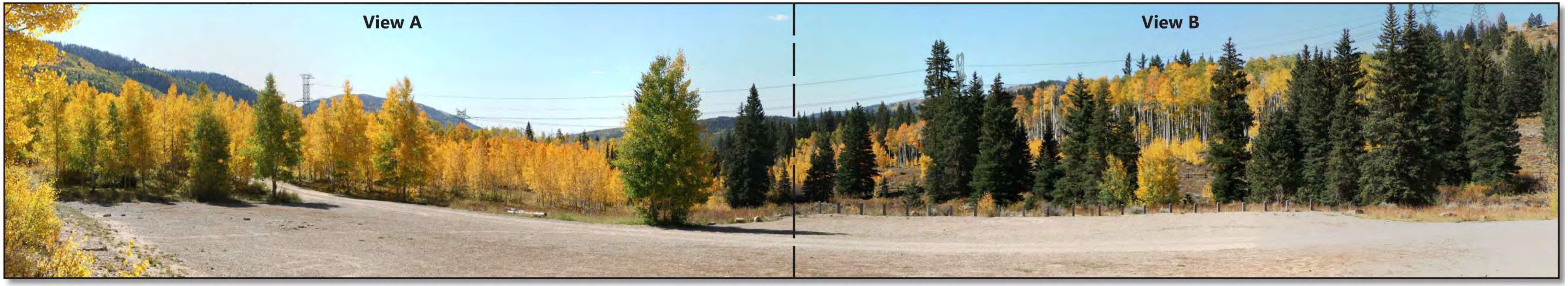
Photo Date and Time: September 27, 2011, 11:56 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 78-degree field of view
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

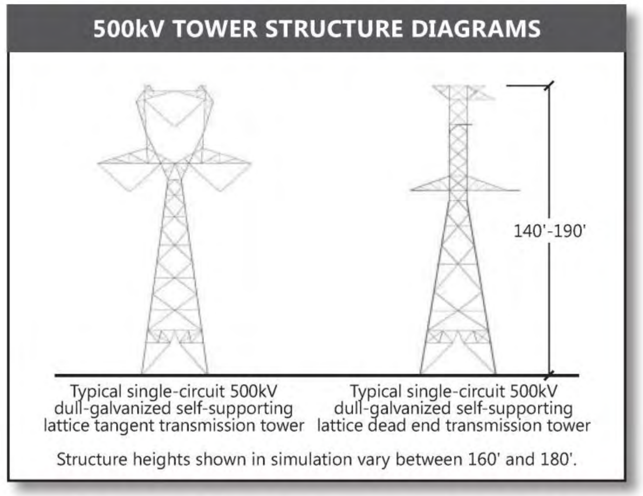
September 2015

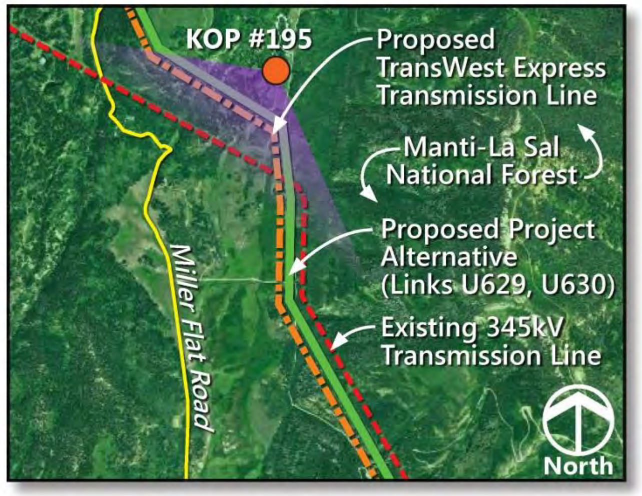


Existing Condition – View looking southwest from Indian Creek Campground in the Manti-La Sal National Forest



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I and the proposed TransWest Express transmission line


500kV TOWER STRUCTURE DIAGRAMS
140'-190'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice dead end transmission tower
Structure heights shown in simulation vary between 160' and 180'.


KOP #195
Proposed TransWest Express Transmission Line
Manti-La Sal National Forest
Proposed Project Alternative (Links U629, U630)
Existing 345kV Transmission Line
Miller Flat Road
North

Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

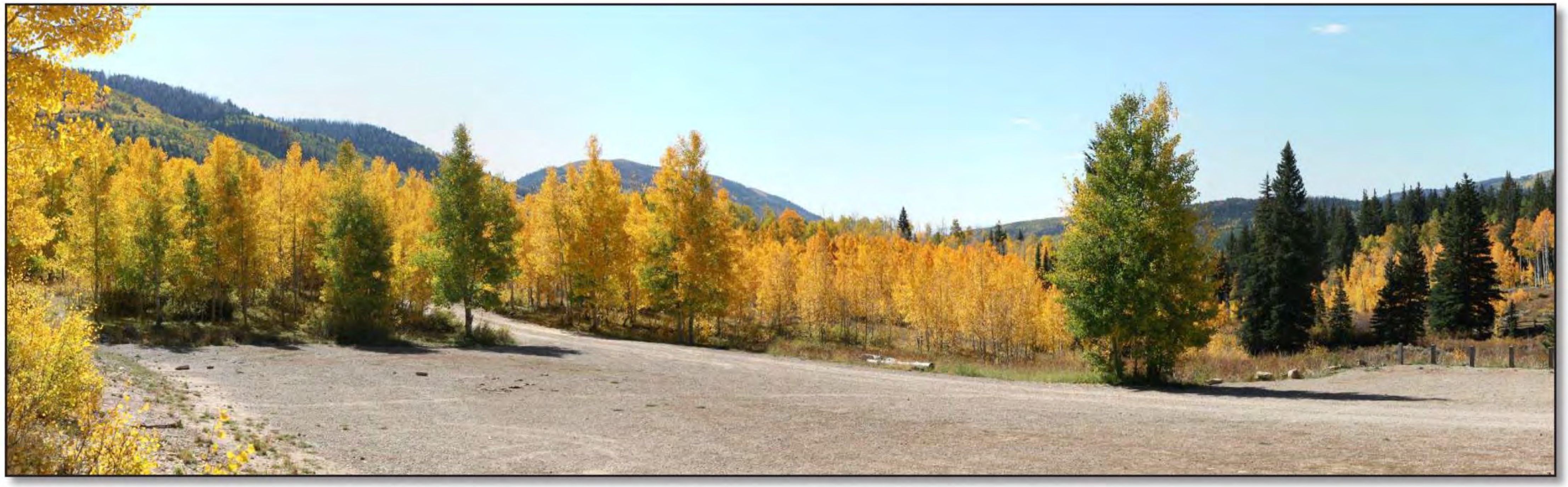
View Location:
Approximate distance to proposed transmission line from photo location is 0.3 mile.

Photo Date and Time: September 27, 2011, 11:56 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 135-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

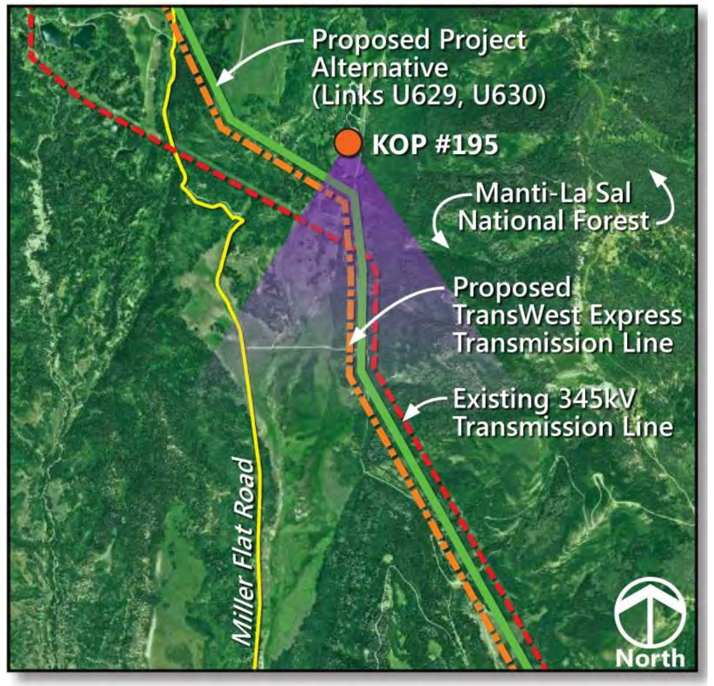
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #195 – Indian Creek Campground Cumulative Effects

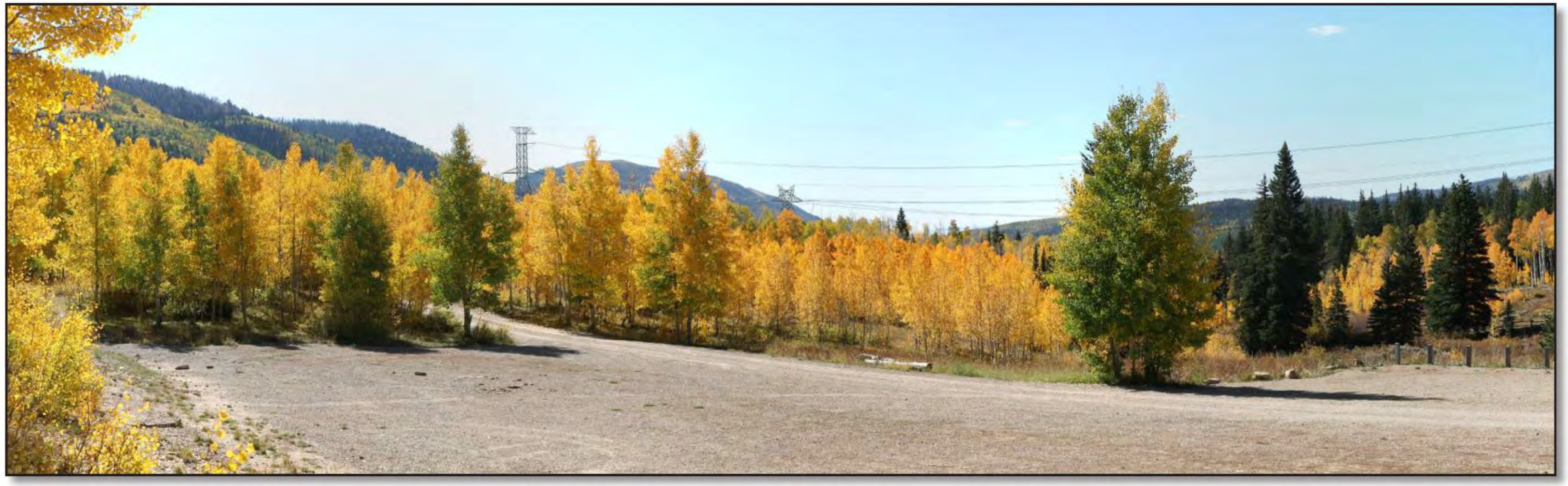
September 2015



Existing Condition – View looking southwest from Indian Creek Campground in the Manti-La Sal National Forest

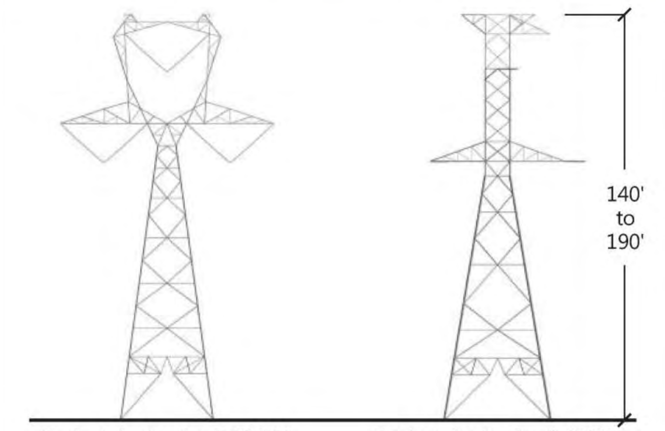

Proposed Project Alternative (Links U629, U630)
KOP #195
Manti-La Sal National Forest
Proposed TransWest Express Transmission Line
Existing 345kV Transmission Line
Miller Flat Road
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 27, 2011, 11:56 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 78-degree field of view
The Above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

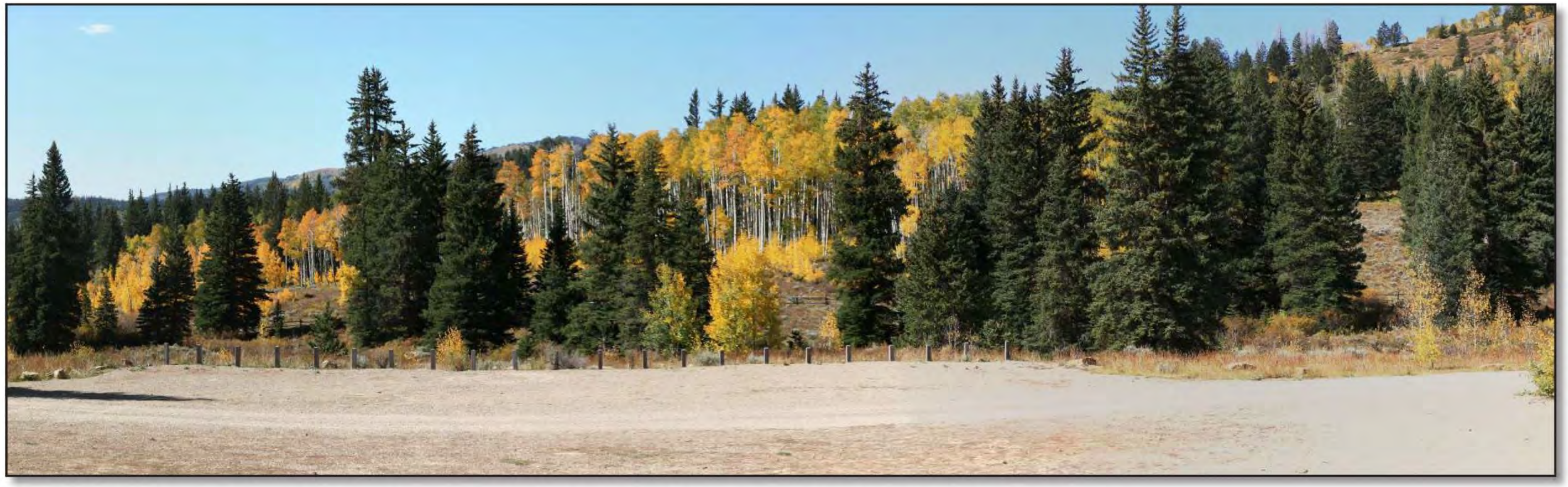
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

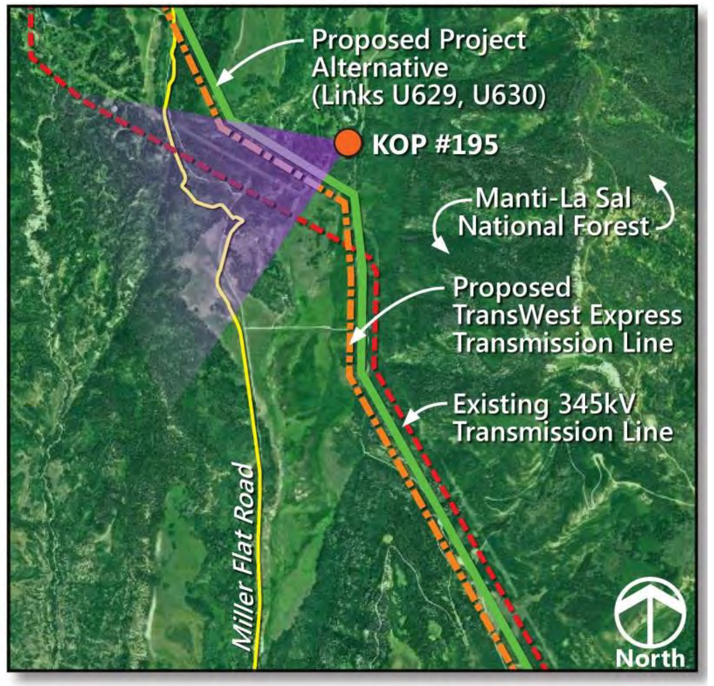
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #195 – Indian Creek Campground
~View A~
Cumulative Effects

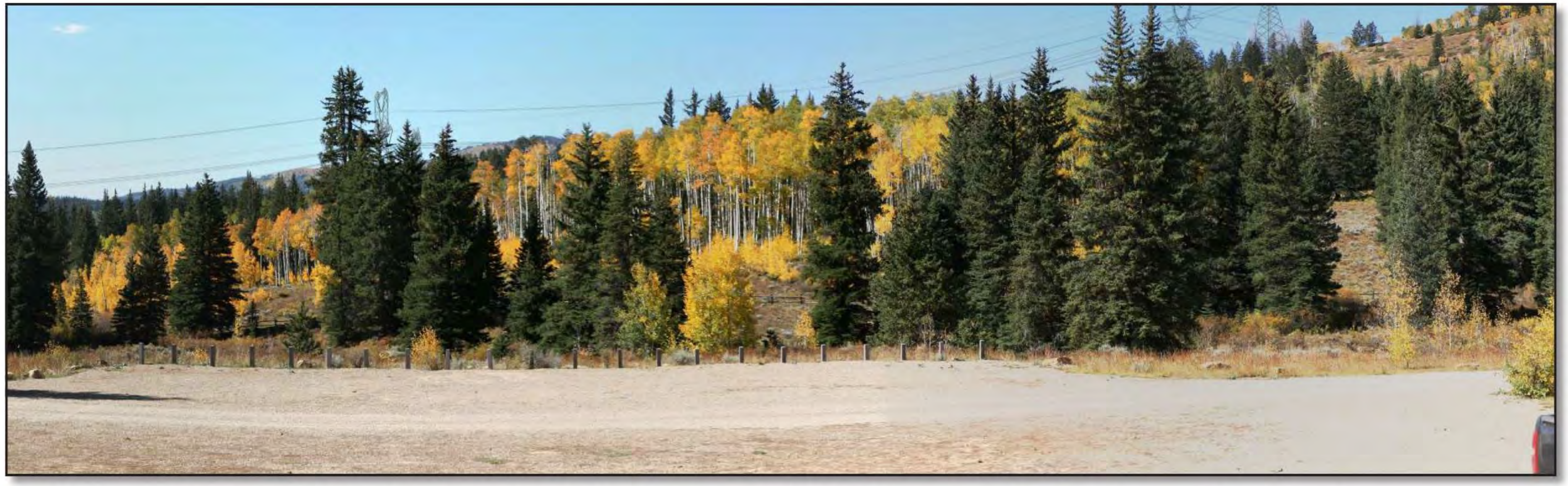
September 2015



Existing Condition – View looking southwest from Indian Creek Campground in the Manti-La Sal National Forest

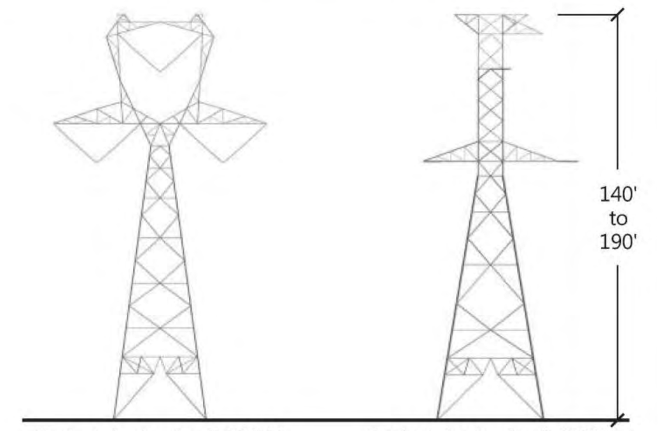

Proposed Project Alternative (Links U629, U630)
KOP #195
Manti-La Sal National Forest
Proposed TransWest Express Transmission Line
Existing 345kV Transmission Line
Miller Flat Road
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 27, 2011, 11:56 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 78-degree field of view
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

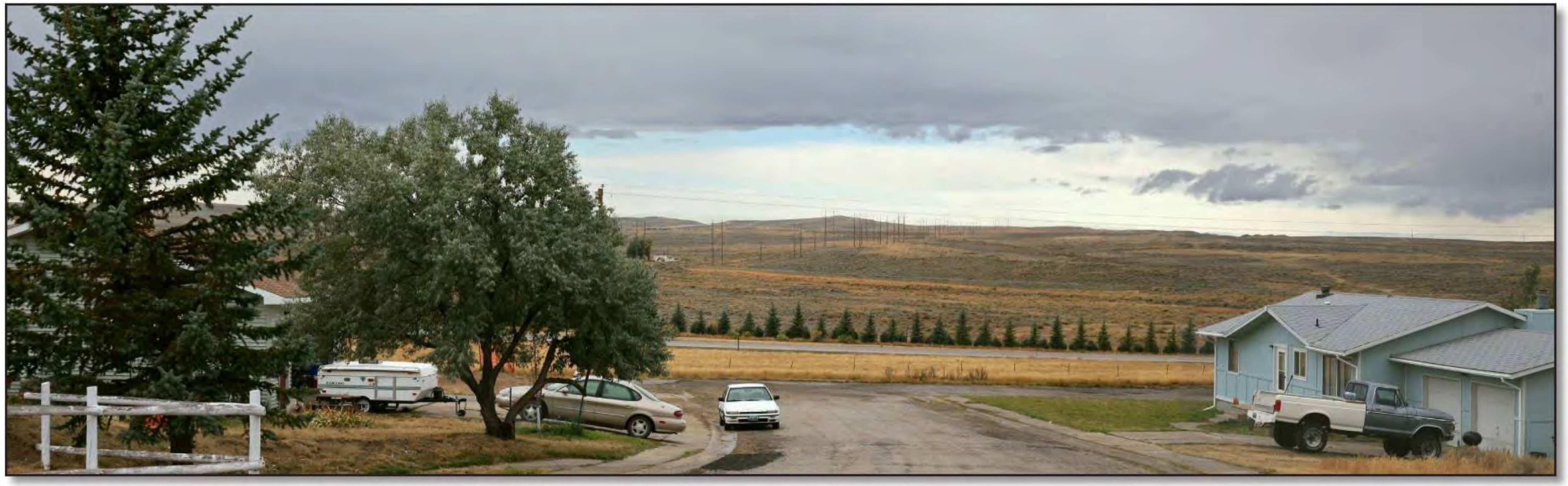
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

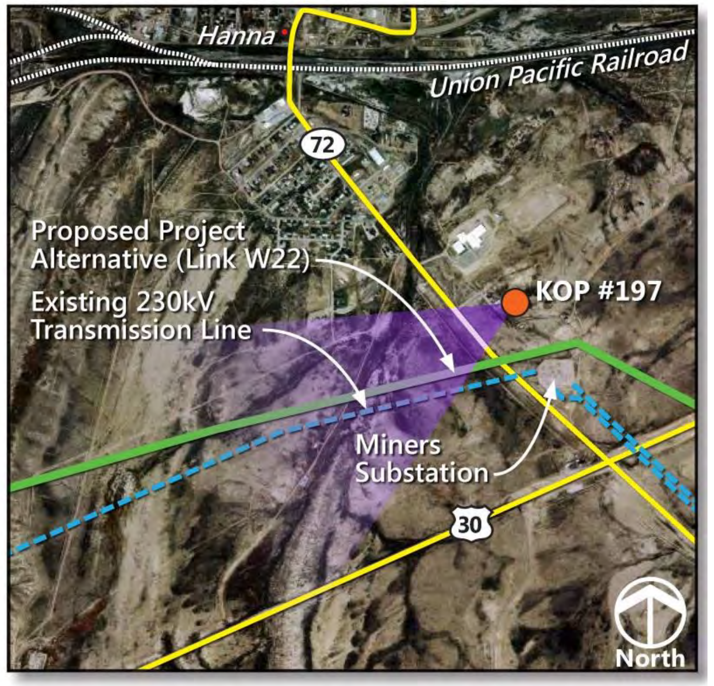
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #195 – Indian Creek Campground
~View B~
Cumulative Effects

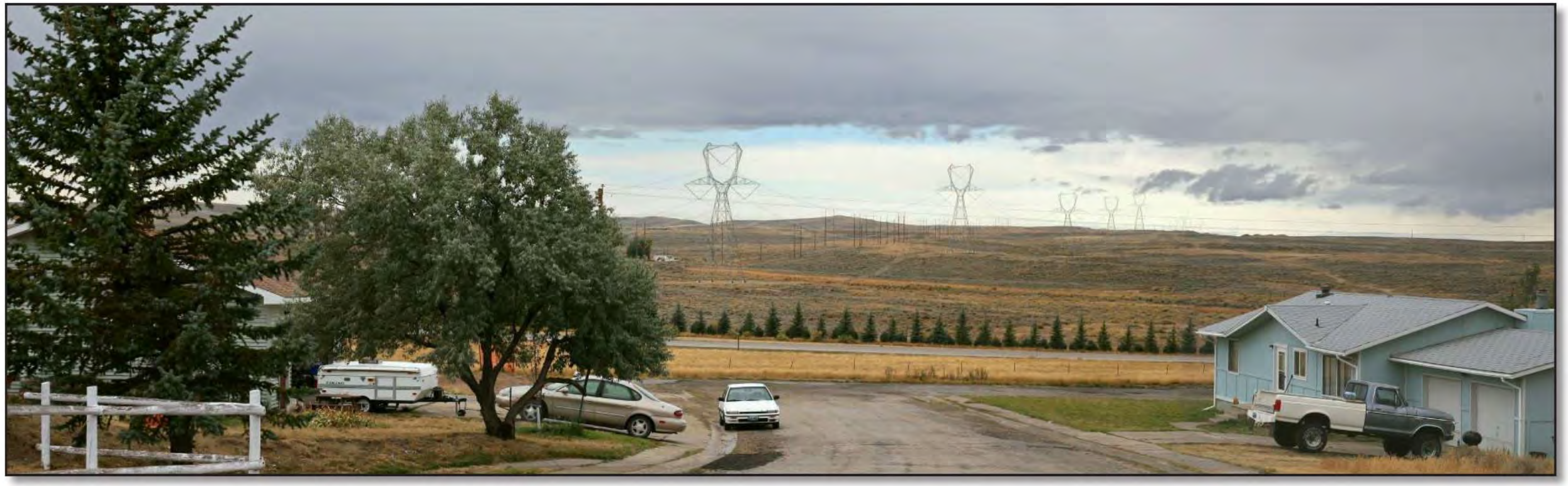
September 2015



Existing Condition – View looking southwest from residences south of Hanna, Wyoming

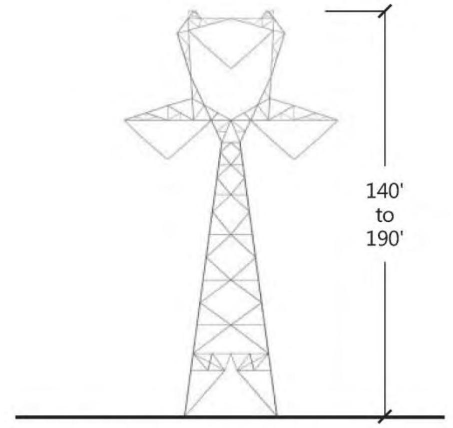

Hanna
Union Pacific Railroad
72
Proposed Project Alternative (Link W22)
Existing 230kV Transmission Line
KOP #197
Miners Substation
30
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternative WYCO-D

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

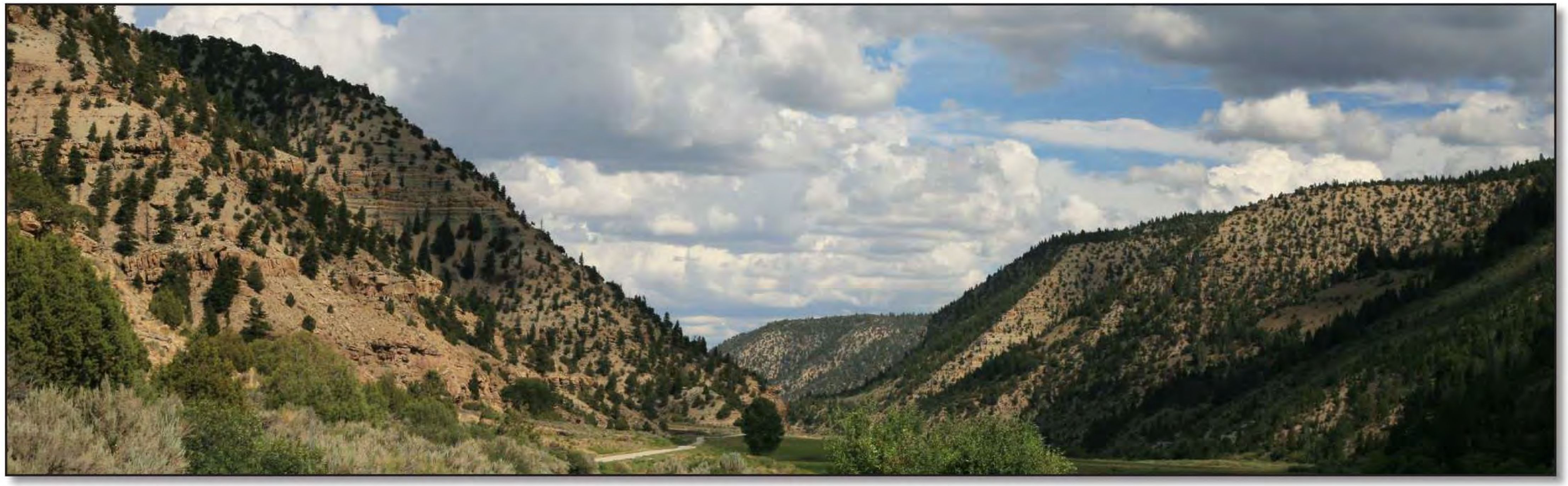
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

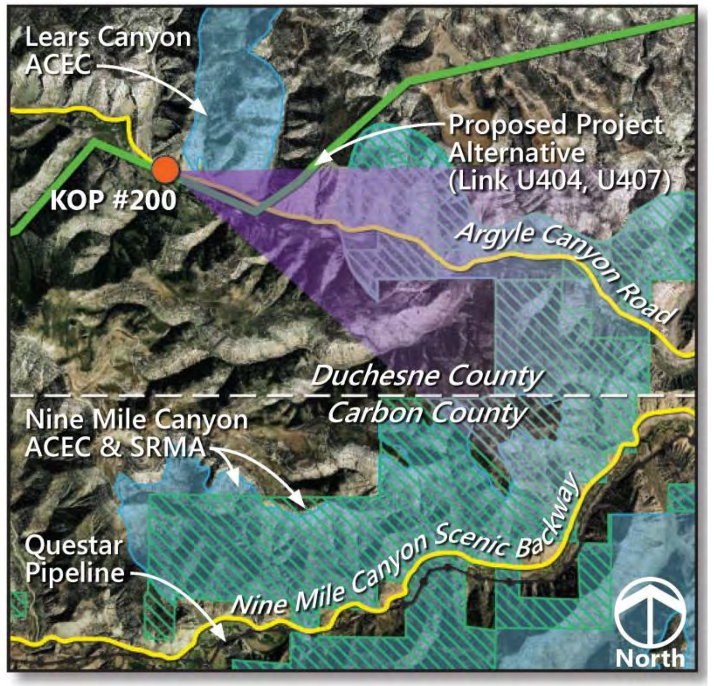
KOP #197 – Hanna Residential

Photo Date and Time: October 6, 2011, 9:01 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 50-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

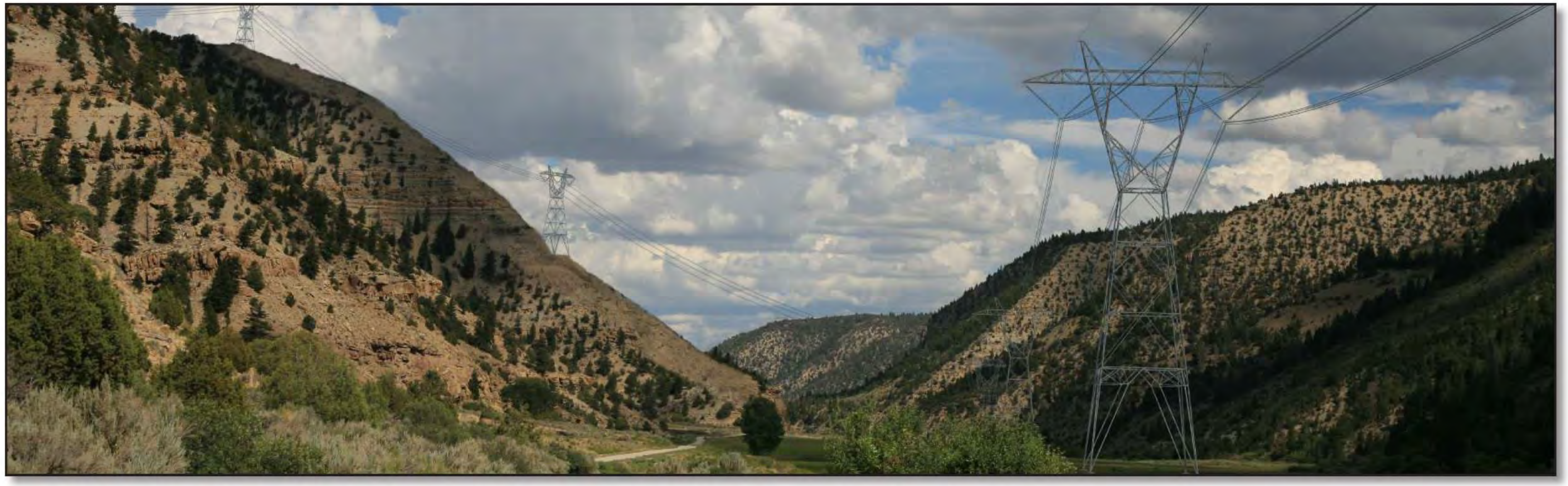
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking east from Argyle Canyon Road toward BLM VRM Class II and Class III lands

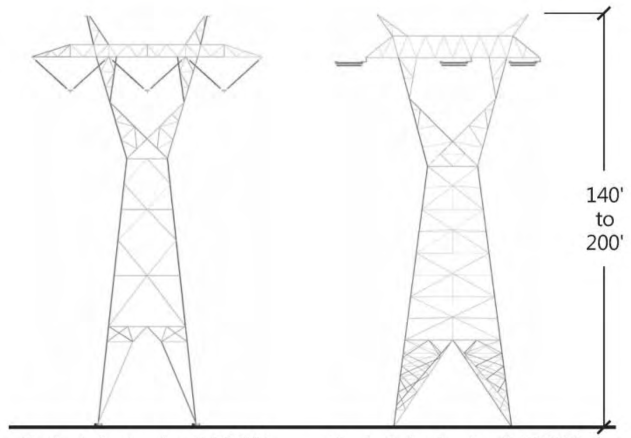

Lears Canyon ACEC
KOP #200
Proposed Project Alternative (Link U404, U407)
Argyle Canyon Road
Duchesne County
Carbon County
Nine Mile Canyon ACEC & SRMA
Questar Pipeline
Nine Mile Canyon Scenic Backway
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Alternatives COUT-H, COUT-I, and Argyle Ridge Variation 1

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

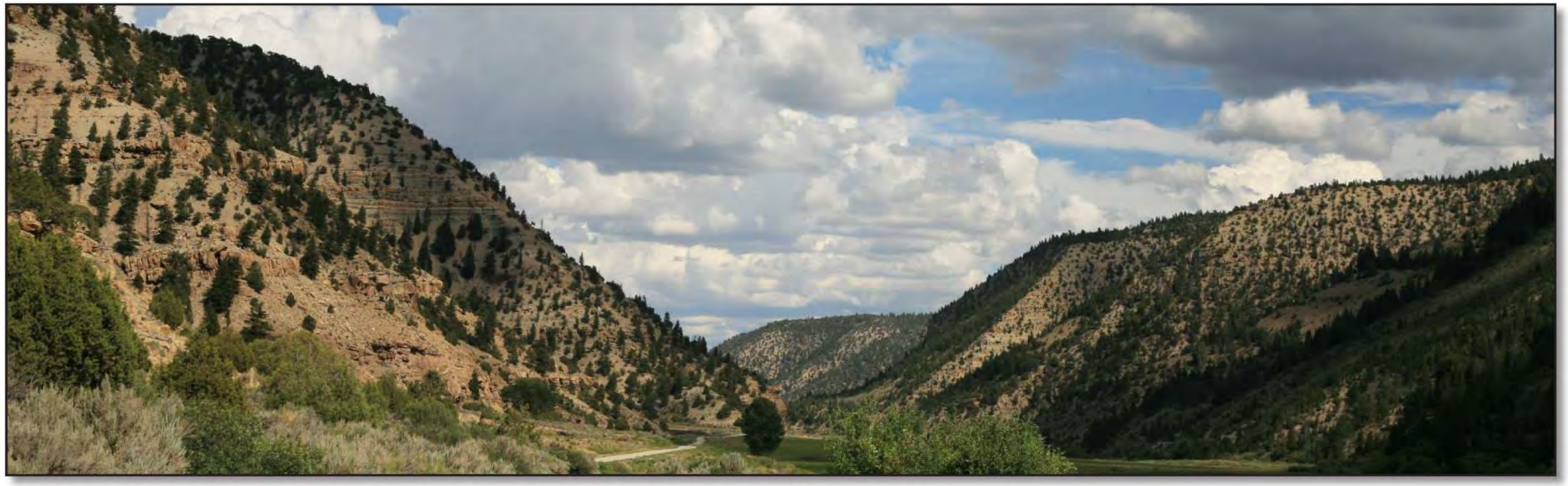
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #200a – Argyle Canyon Road

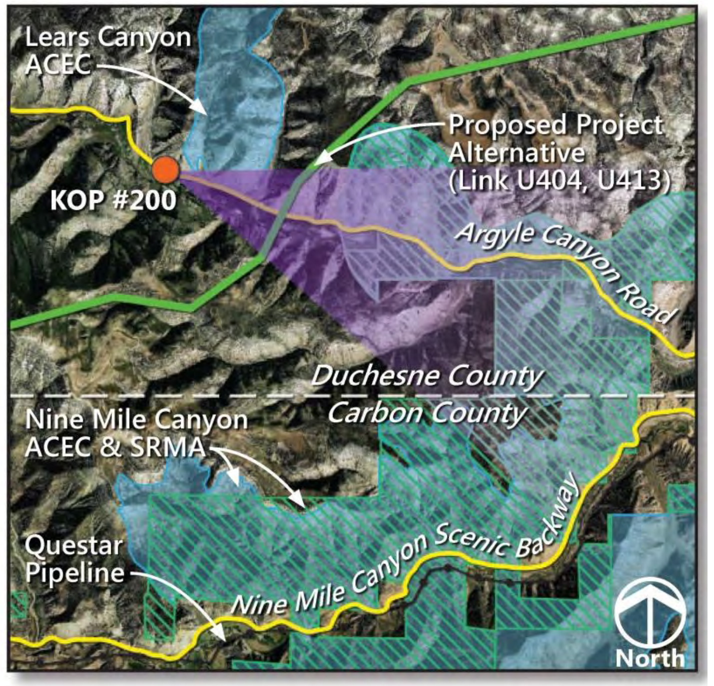
Photo Date and Time: July 24, 2012, 3:45 p.m. Focal Length: 50mm
The Above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

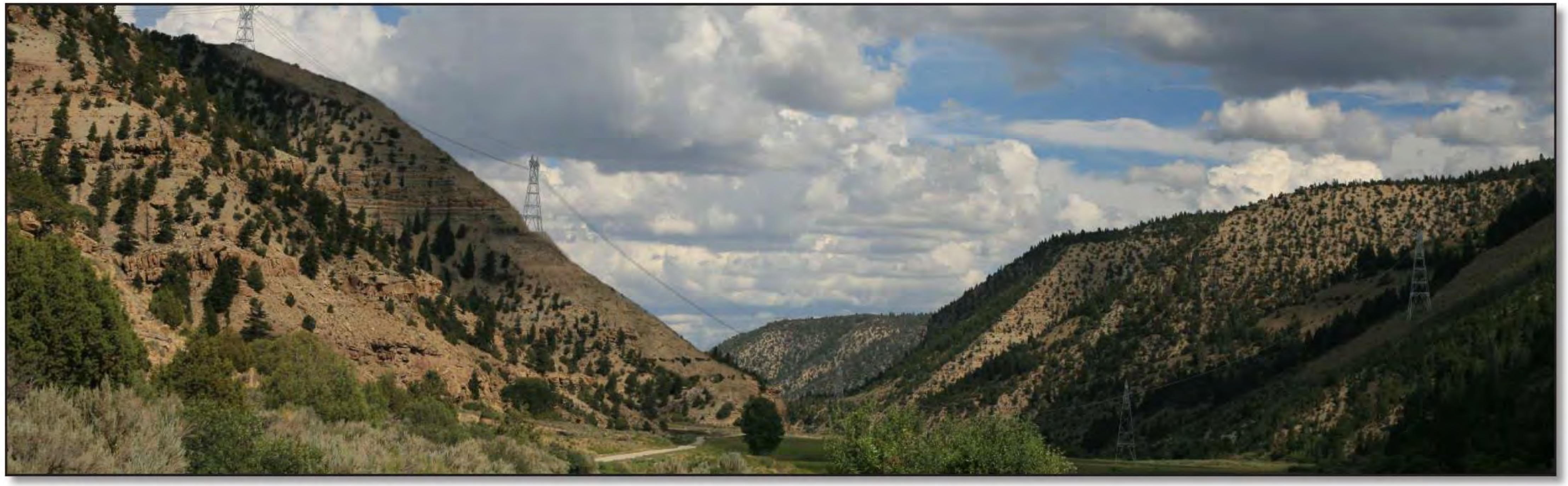
September 2015



Existing Condition – View looking east from Argyle Canyon Road toward BLM VRM Class II and Class III lands

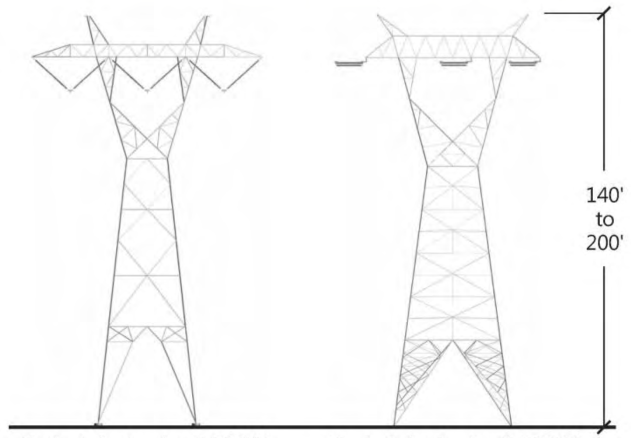

Lears Canyon ACEC
Proposed Project Alternative (Link U404, U413)
KOP #200
Argyle Canyon Road
Duchesne County
Carbon County
Nine Mile Canyon ACEC & SRMA
Questar Pipeline
Nine Mile Canyon Scenic Backway
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Alternative COUT-C

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

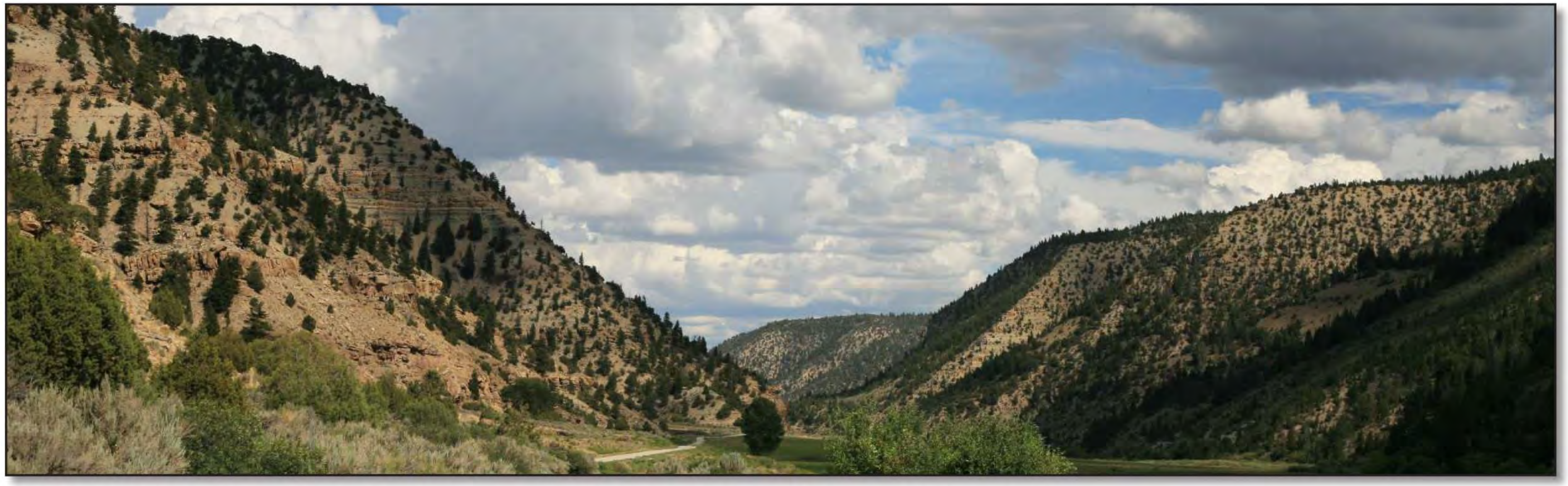
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #200b – Argyle Canyon Road

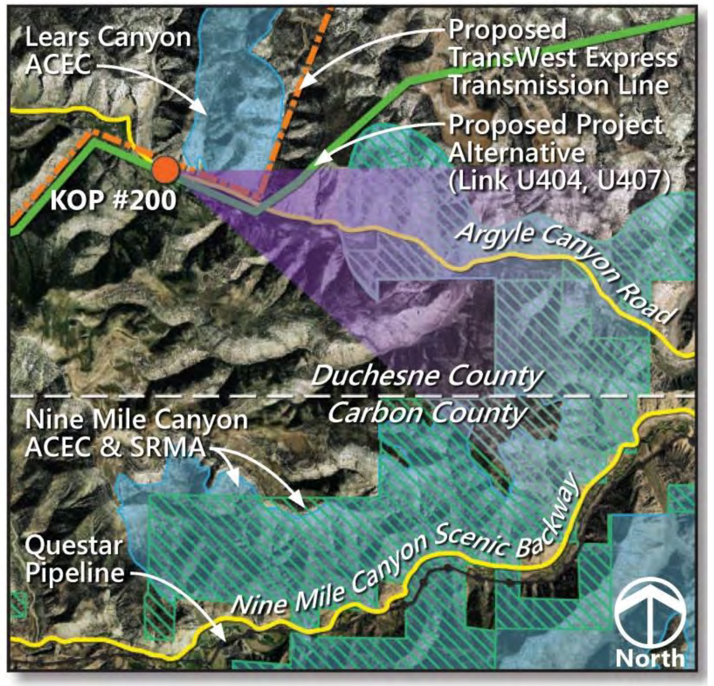
Photo Date and Time: July 24, 2012, 3:45 p.m. Focal Length: 50mm
The Above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

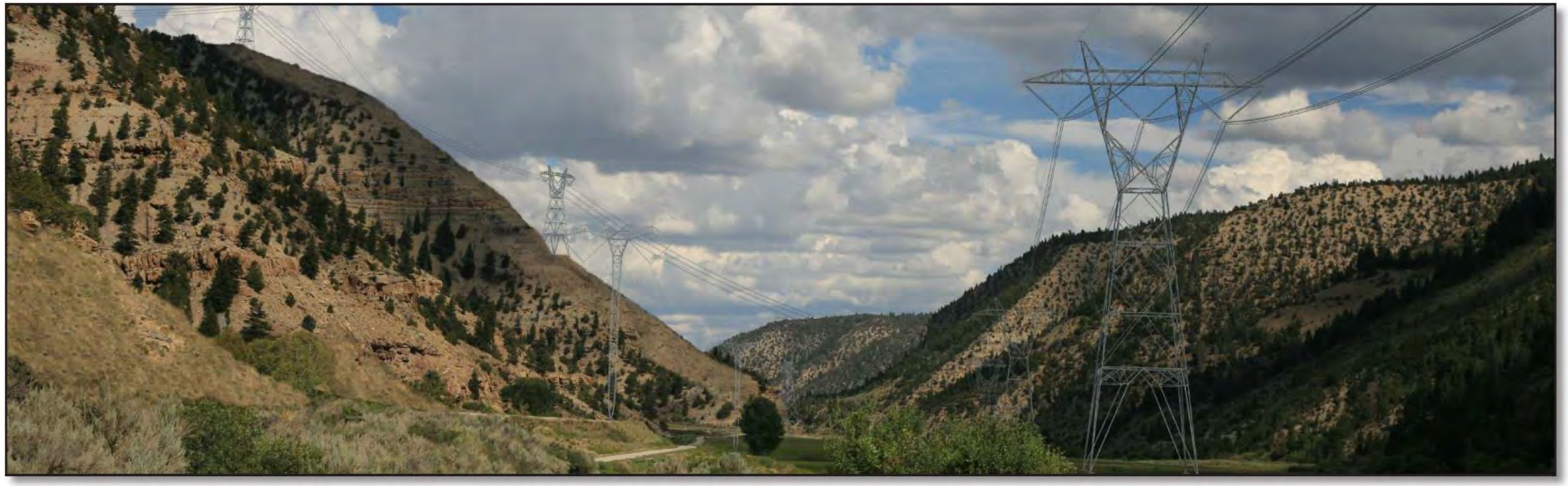
September 2015



Existing Condition – View looking east from Argyle Canyon Road toward BLM VRM Class II and Class III lands

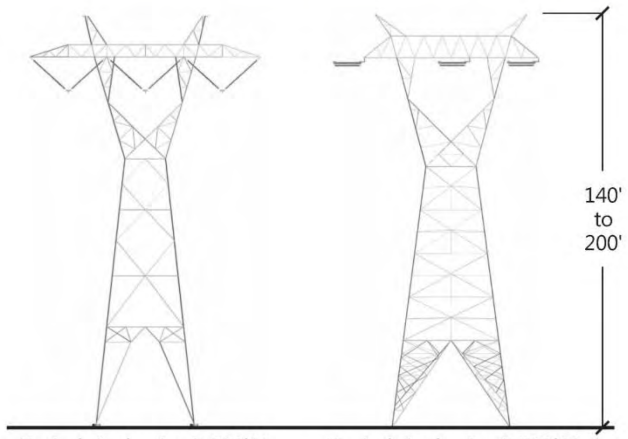

Lears Canyon ACEC
Proposed TransWest Express Transmission Line
Proposed Project Alternative (Link U404, U407)
KOP #200
Argyle Canyon Road
Duchesne County
Carbon County
Nine Mile Canyon ACEC & SRMA
Questar Pipeline
Nine Mile Canyon Scenic Backway
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Alternatives COUT-H, COUT-I, and Argyle Ridge Variation 1 and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

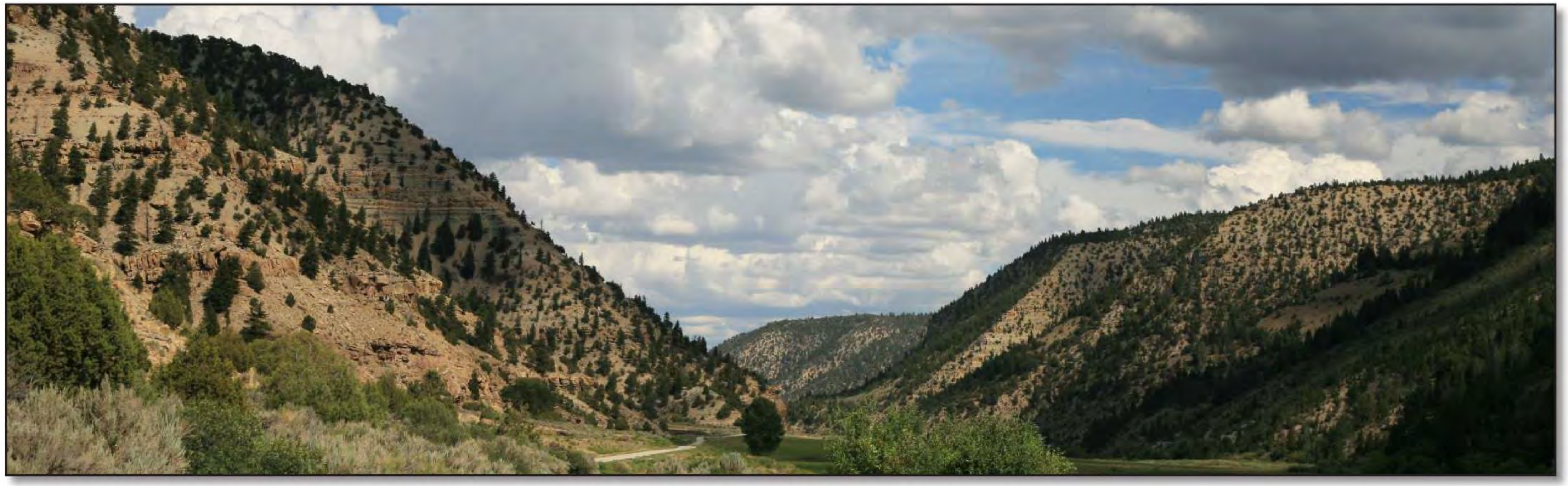
KOP #200a – Argyle Canyon Road Cumulative Effects

Photo Date and Time: July 24, 2012, 3:45 p.m. Focal Length: 50mm
The Above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

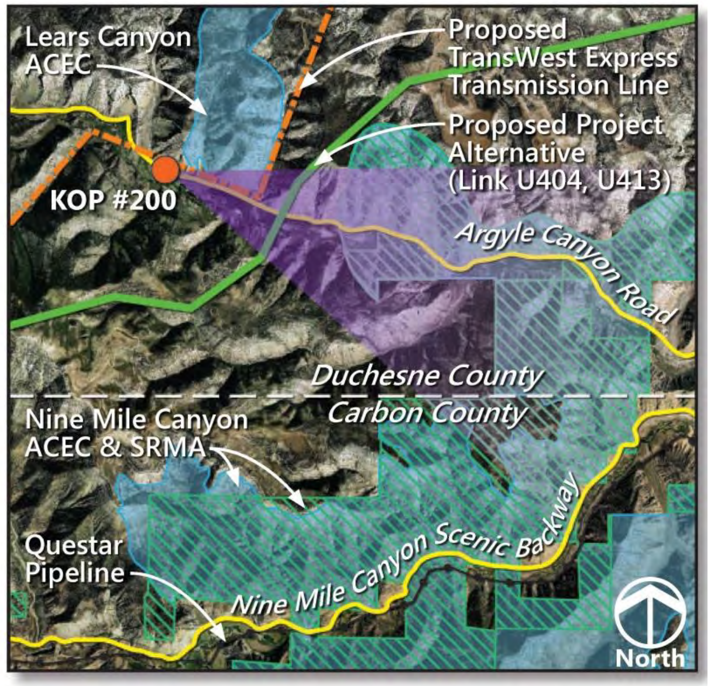
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

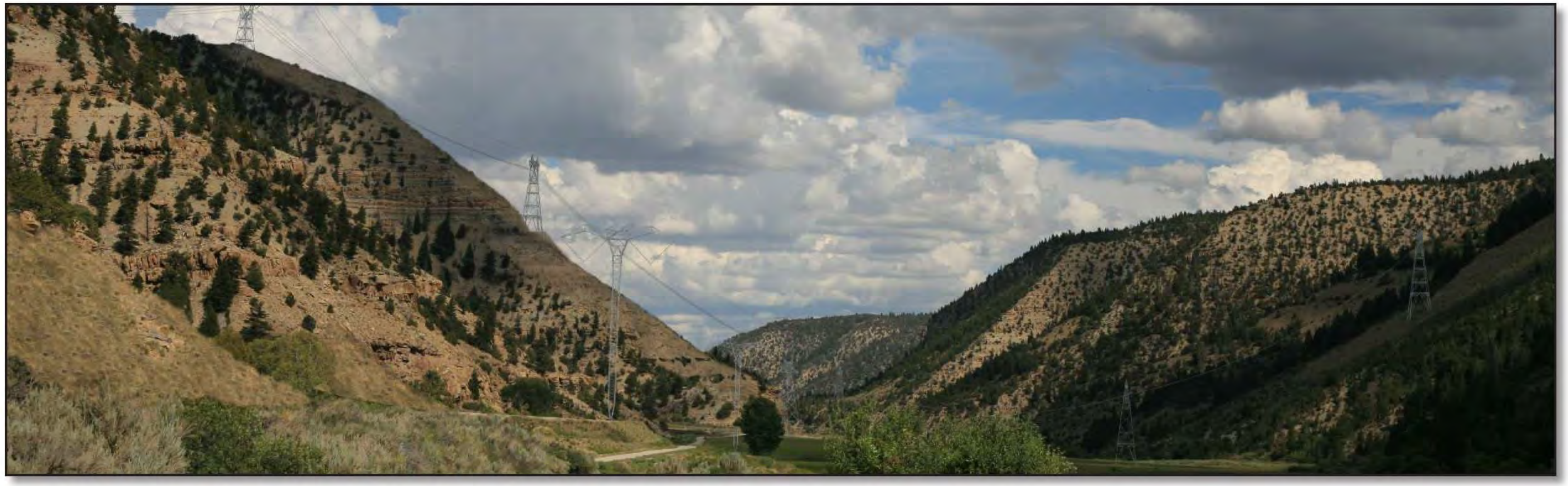
September 2015



Existing Condition – View looking east from Argyle Canyon Road toward BLM VRM Class II and Class III lands


Lears Canyon ACEC
Proposed TransWest Express Transmission Line
Proposed Project Alternative (Link U404, U413)
KOP #200
Argyle Canyon Road
Duchesne County
Carbon County
Nine Mile Canyon ACEC & SRMA
Questar Pipeline
Nine Mile Canyon Scenic Backway
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Alternatives COUT-C and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS

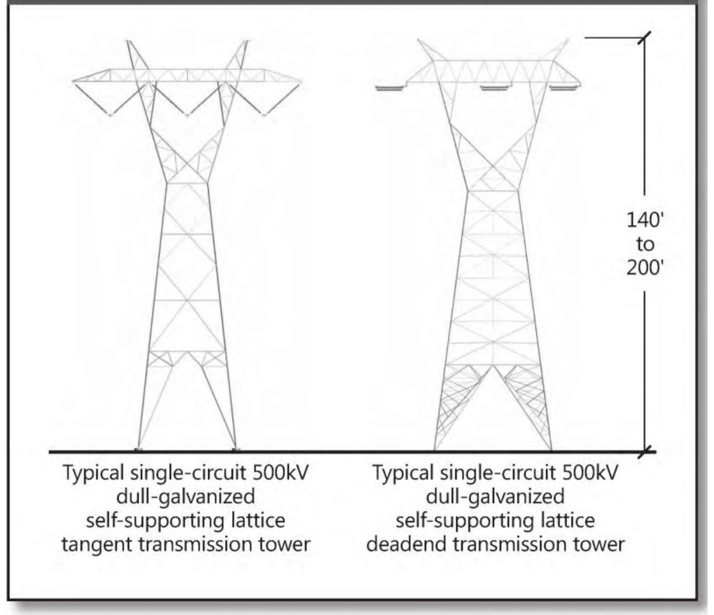

140' to 200'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Photo Date and Time: July 24, 2012, 3:45 p.m. Focal Length: 50mm
The Above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

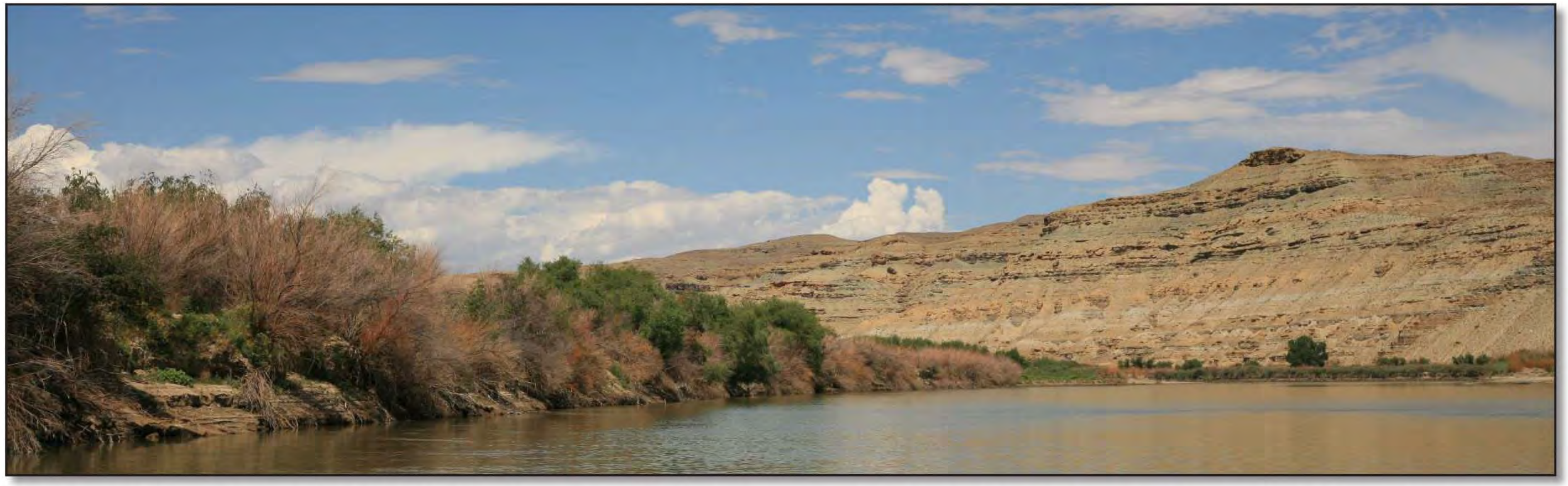
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

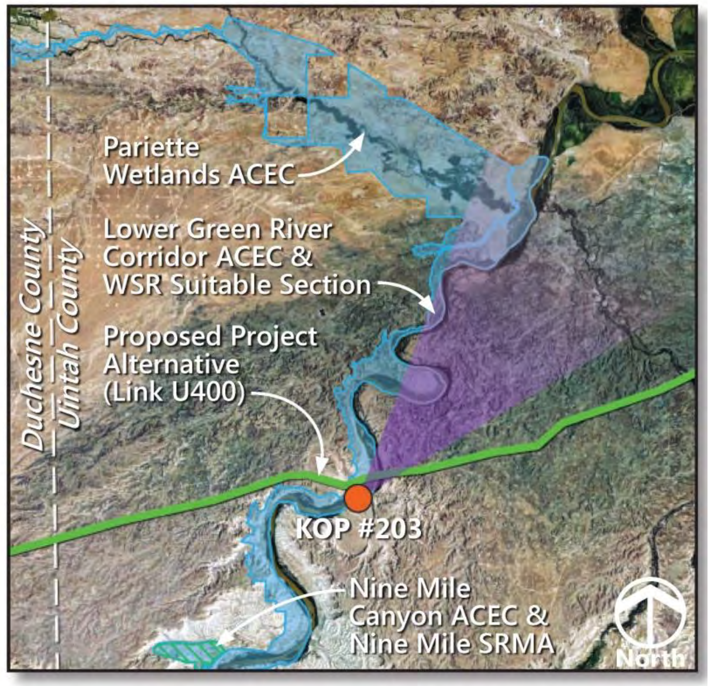
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #200b – Argyle Canyon Road Cumulative Effects

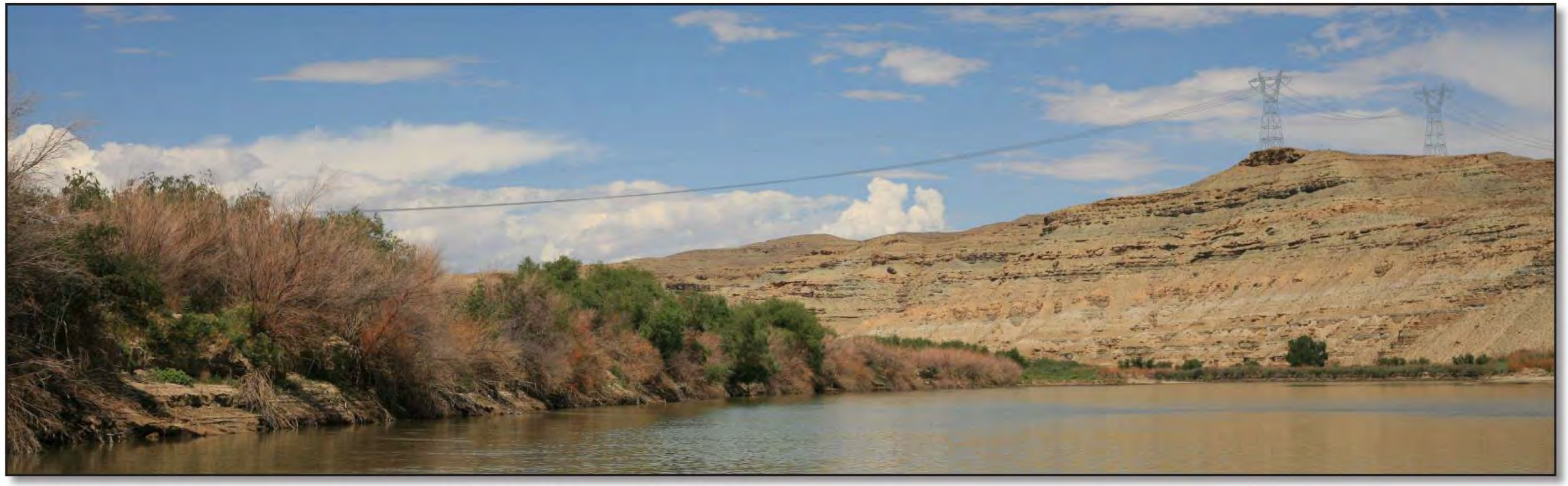
September 2015



Existing Condition – View looking northeast from Fourmile Bottom in the Lower Green River Corridor ACEC toward BLM VRM Class II and Class IV lands

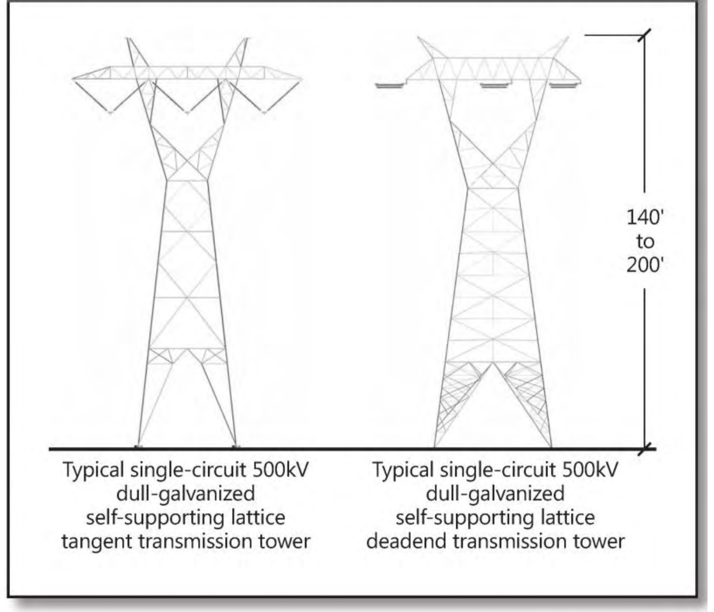

Pariette Wetlands ACEC
Lower Green River Corridor ACEC & WSR Suitable Section
Proposed Project Alternative (Link U400)
Duchesne County
Uintah County
KOP #203
Nine Mile Canyon ACEC & Nine Mile SRMA
North

View Location: Approximate distance of proposed transmission line from photo location is 0.9 mile.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS


140' to 200'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

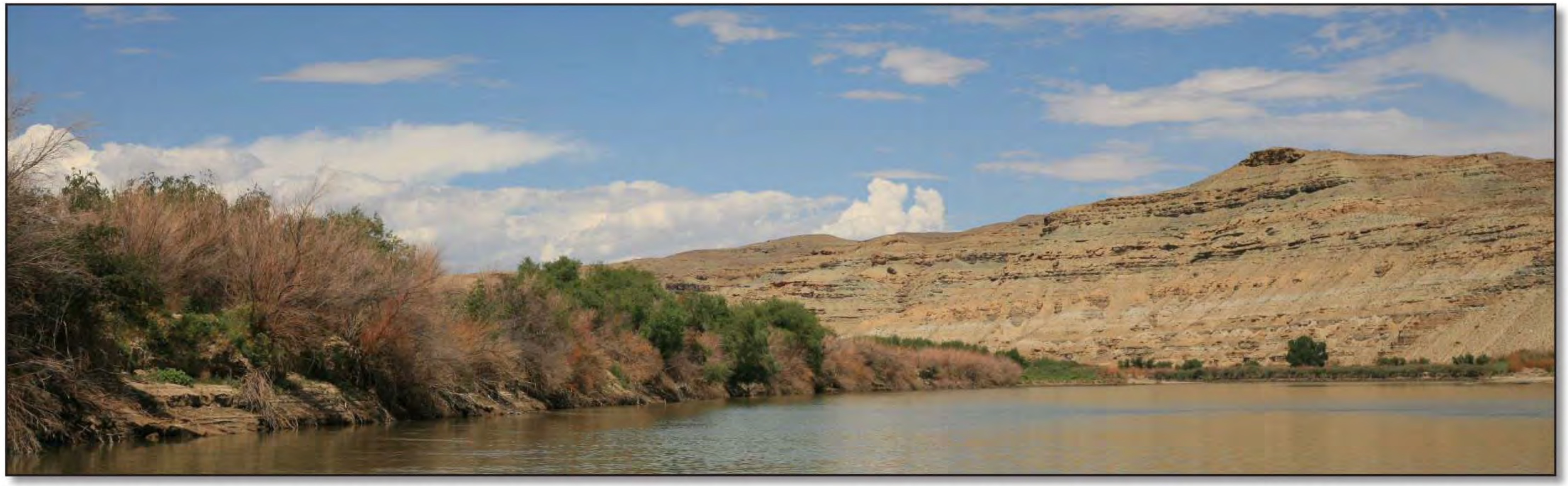
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #203 – Fourmile Bottom

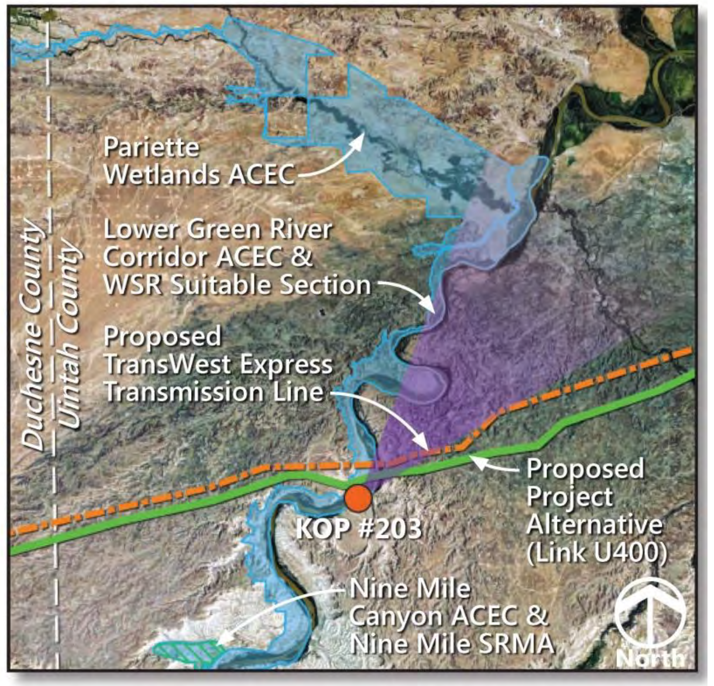
Photo Date and Time: July 25, 2012, 2:09 p.m.   Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

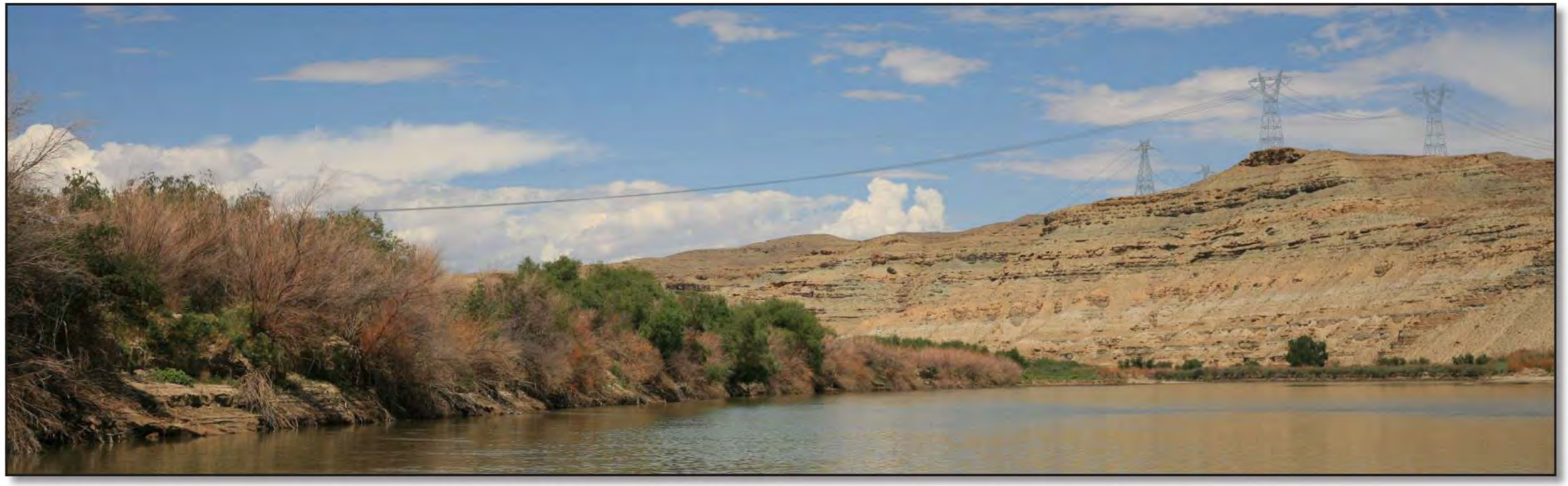
September 2015



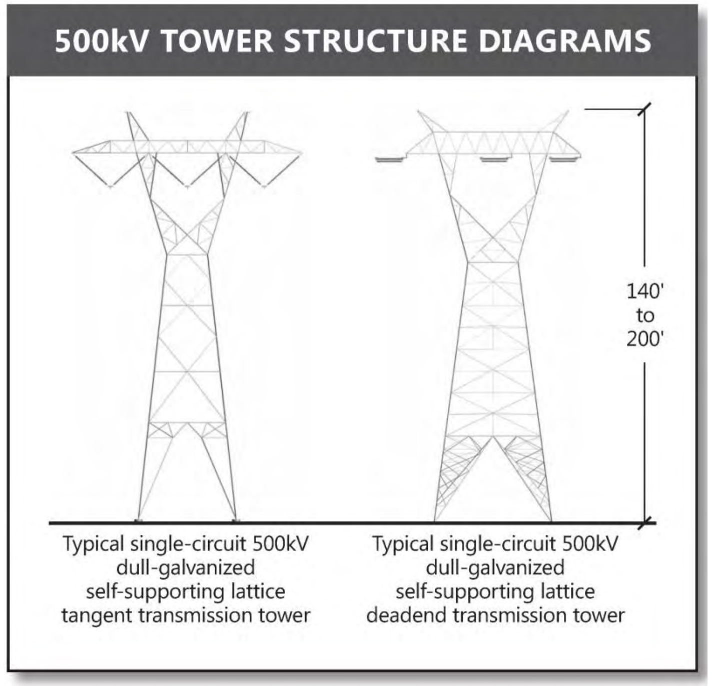
Existing Condition – View looking northeast from Fourmile Bottom in the Lower Green River Corridor ACEC toward BLM VRM Class II and Class IV lands


Pariette Wetlands ACEC
Lower Green River Corridor ACEC & WSR Suitable Section
Proposed TransWest Express Transmission Line
Duchesne County
Uintah County
Proposed Project Alternative (Link U400)
KOP #203
Nine Mile Canyon ACEC & Nine Mile SRMA
North

View Location: Approximate distance of proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I, and the proposed TransWest Express transmission line



500kV TOWER STRUCTURE DIAGRAMS

140' to 200'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Photo Date and Time: July 25, 2012, 2:09 p.m.   Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

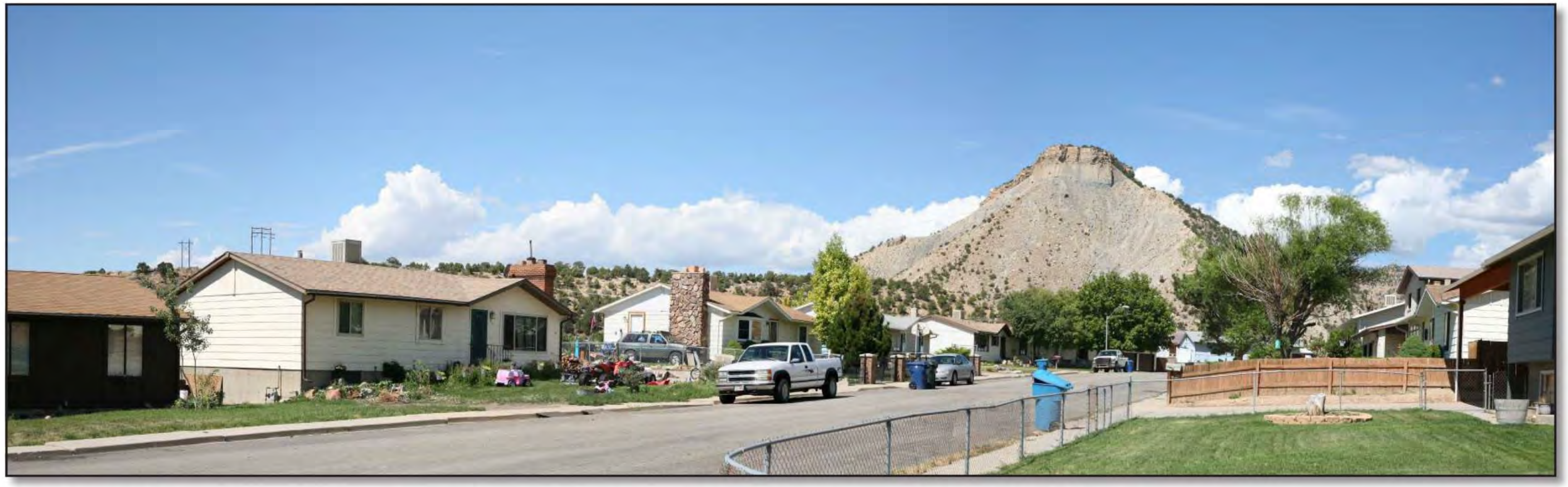
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

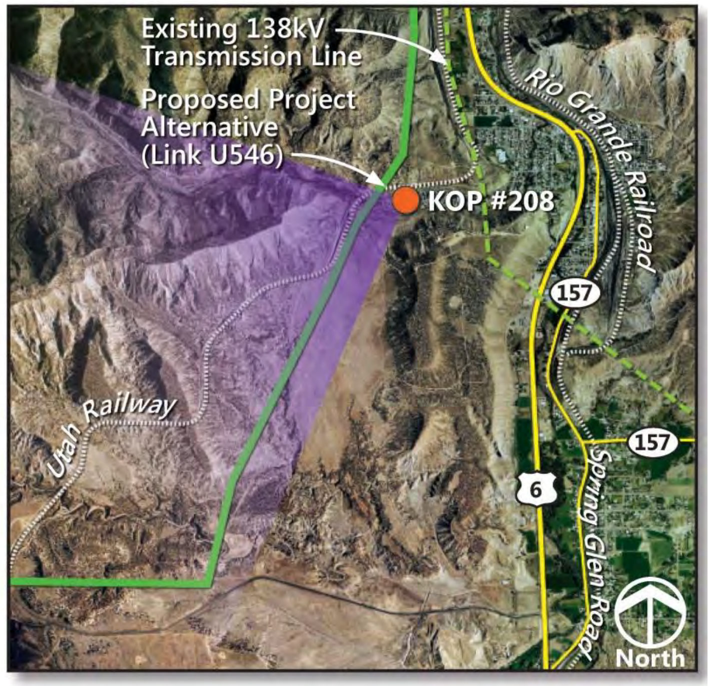
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #203 – Fourmile Bottom Cumulative Effects

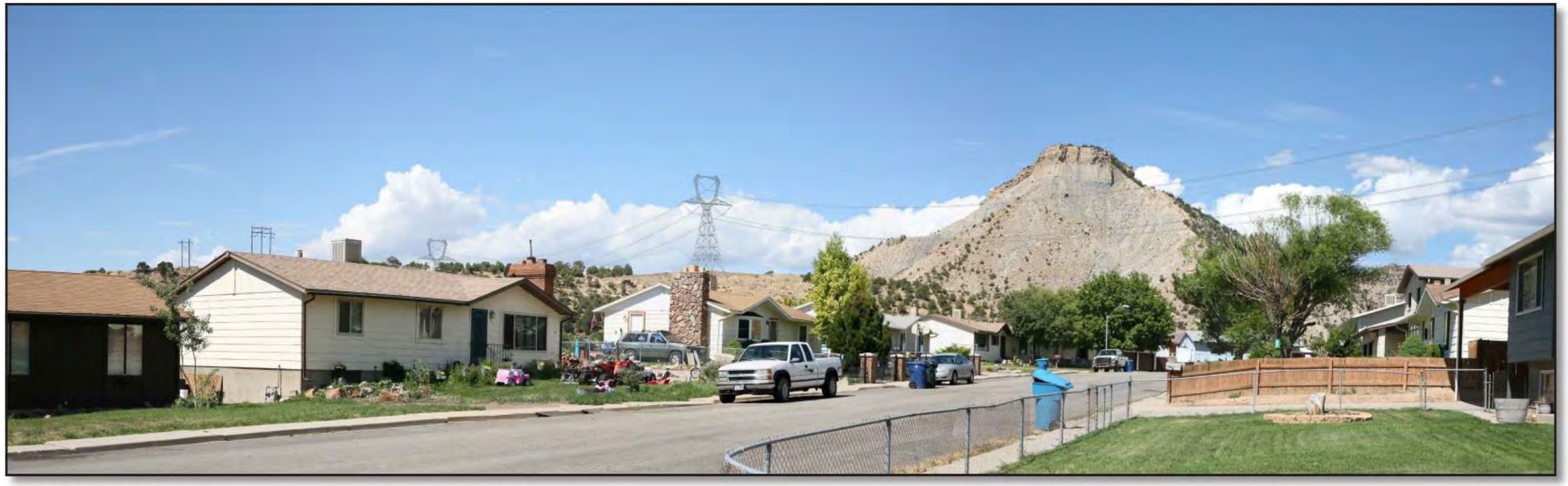
September 2015



Existing Condition – View looking southwest from residences west of Helper, Utah, toward BLM VRM Class III lands

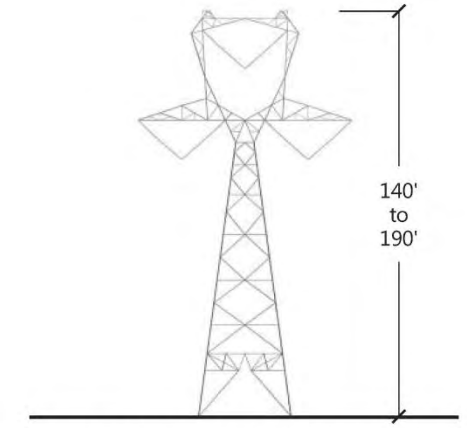

Existing 138kV Transmission Line
Proposed Project Alternative (Link U546)
KOP #208
Rio Grande Railroad
157
157
Utah Railway
6
Spring Glen Road
North

View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternative COUT-H

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

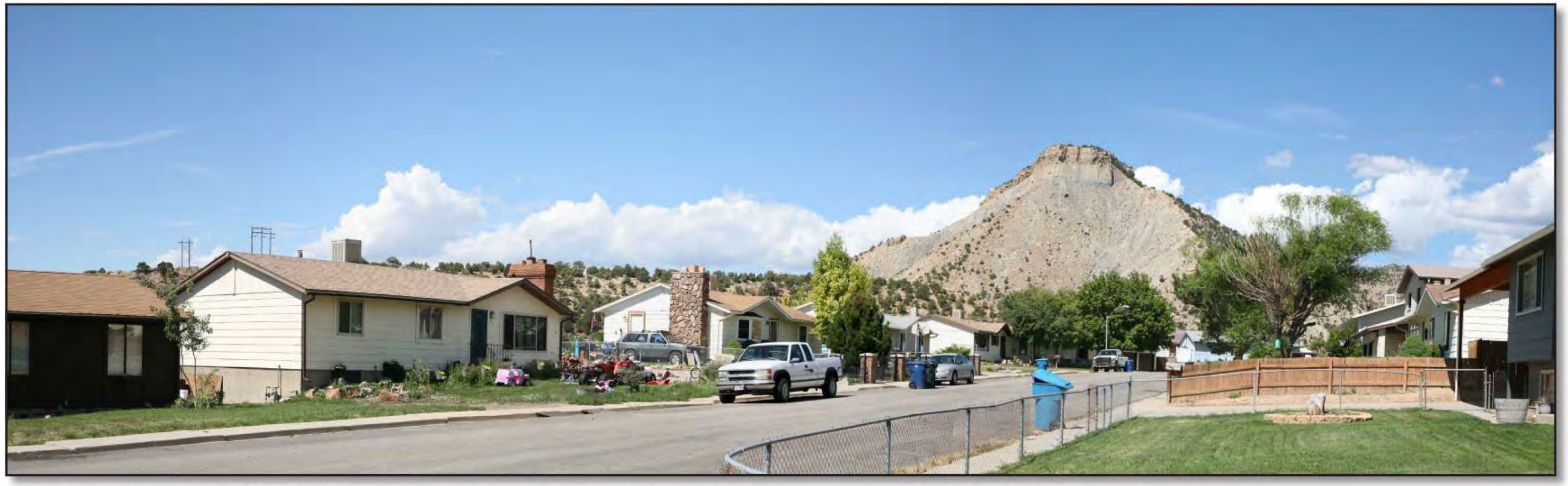
Photo Date and Time: July 23, 2012, 1:44 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in an 80-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

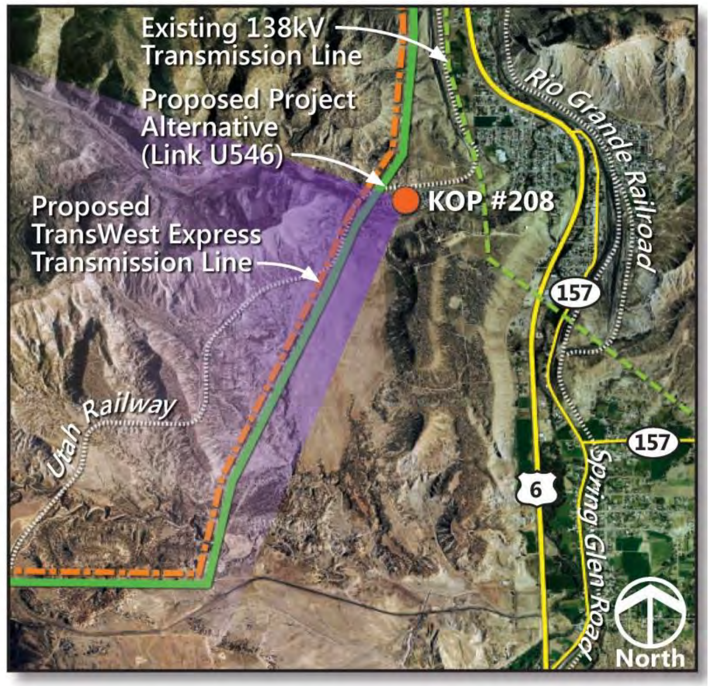
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #208 – West Helper Residences

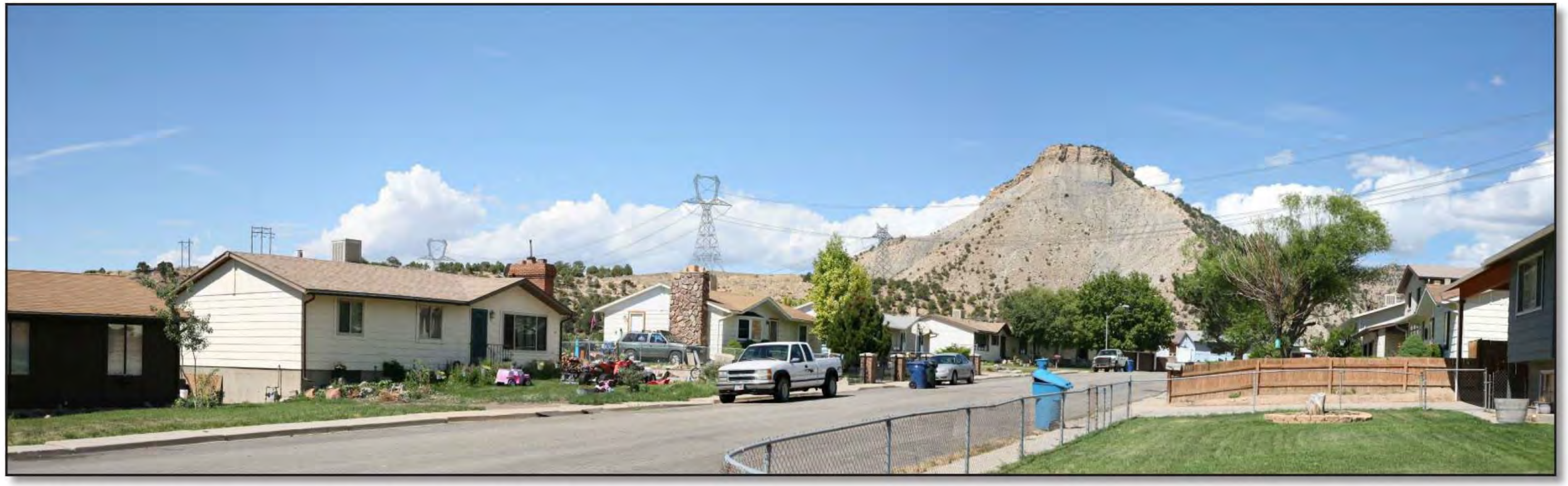
September 2015



Existing Condition – View looking southwest from residences west of Helper, Utah, toward BLM VRM Class III lands

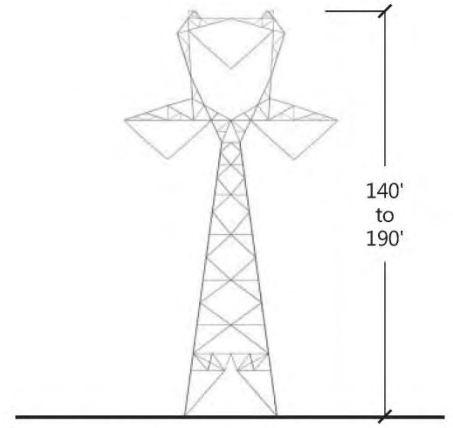

Existing 138kV Transmission Line
Proposed Project Alternative (Link U546)
KOP #208
Proposed TransWest Express Transmission Line
Rio Grande Railroad
157
157
6
Utah Railway
Spring Glen Road
North

View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternative COUT-H and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 1:44 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in an 80-degree field of view.
The Above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

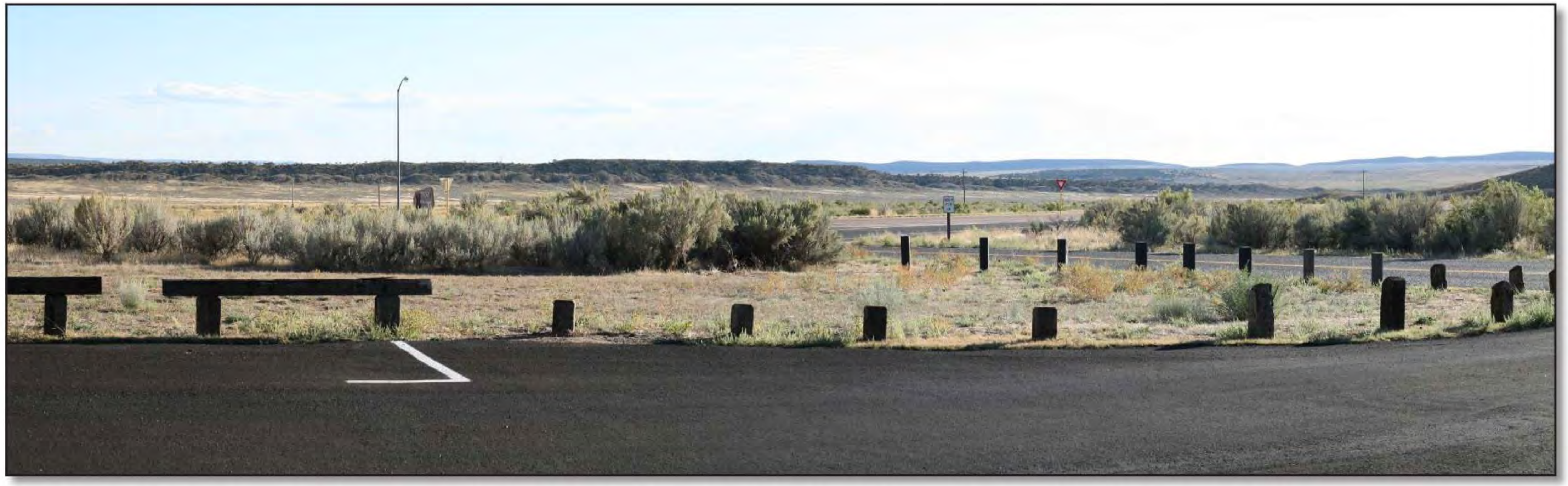
Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

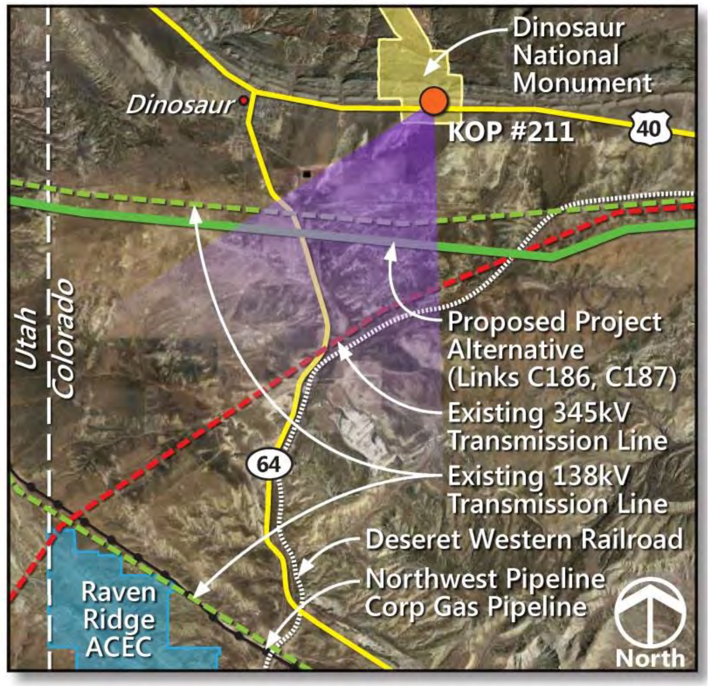
KOP #208 – West Helper Residences

Cumulative Effects

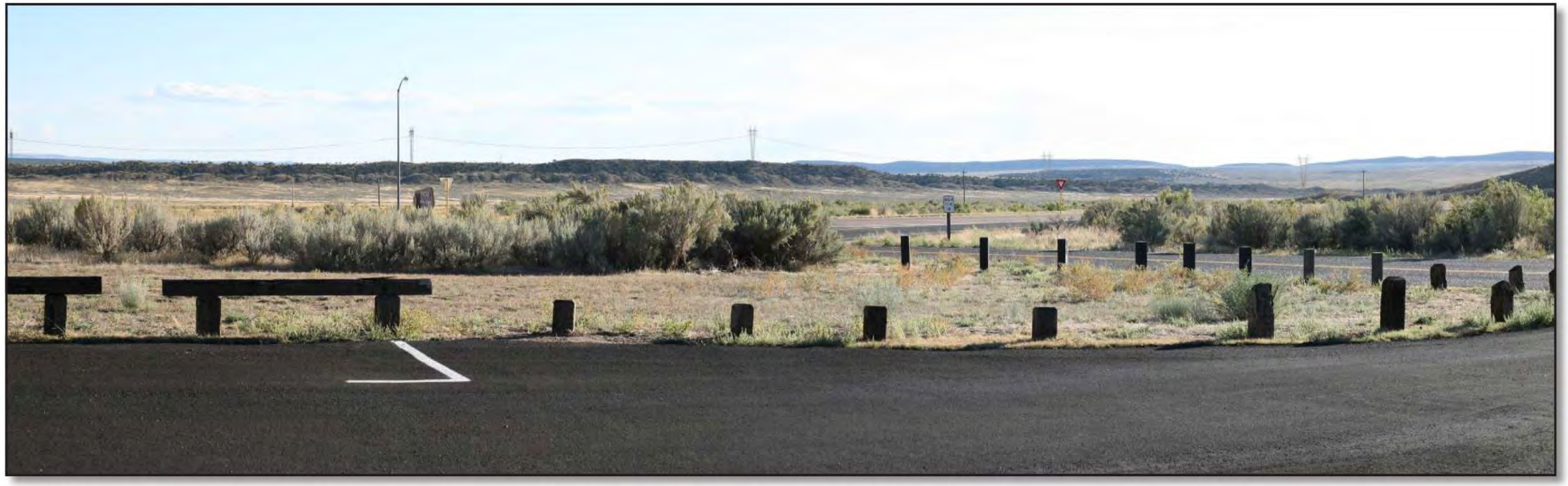
September 2015



Existing Condition – View looking southwest from the Dinosaur National Monument Visitor Center toward BLM VRM Class III lands

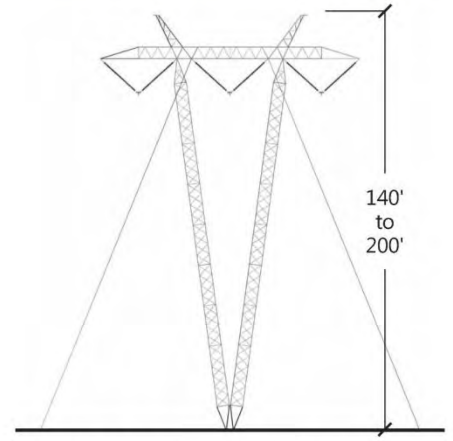

Dinosaur National Monument
Dinosaur
KOP #211
40
Utah
Colorado
Proposed Project Alternative (Links C186, C187)
Existing 345kV Transmission Line
64
Existing 138kV Transmission Line
Deseret Western Railroad
Northwest Pipeline Corp Gas Pipeline
Raven Ridge ACEC
North

View Location: Approximate distance of proposed transmission line from photo location is 1.3 miles.



Simulated Condition – View of Alternatives COUT-A, COUT-B, and Colorado-Utah Border Variation 1

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

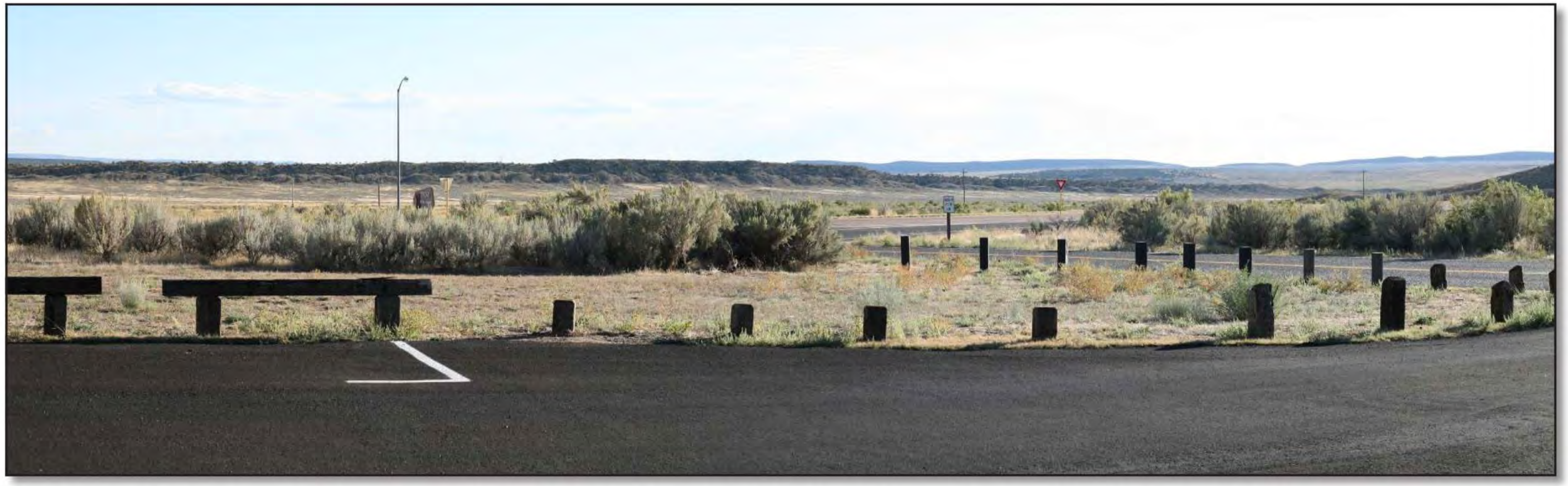
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #211a – Dinosaur National Monument Visitor Center

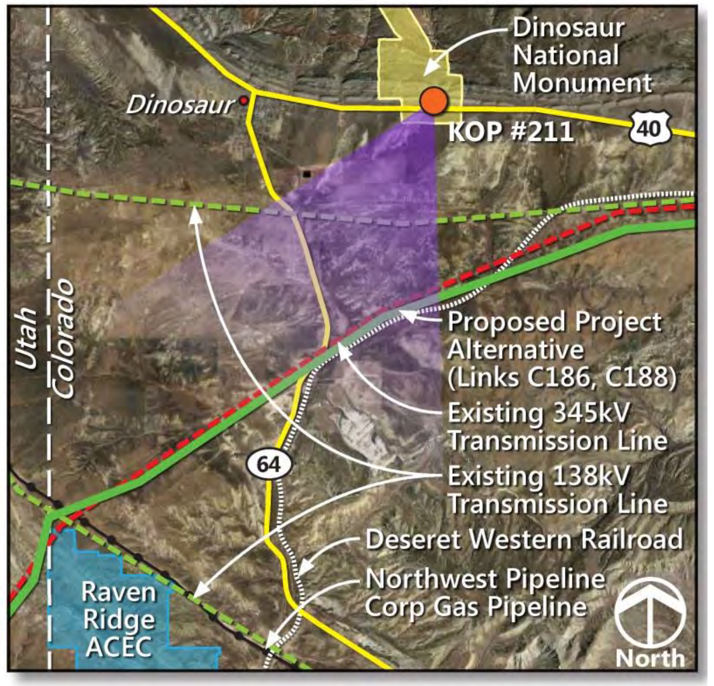
Photo Date and Time: September 26, 2011, 4:39 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 58-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

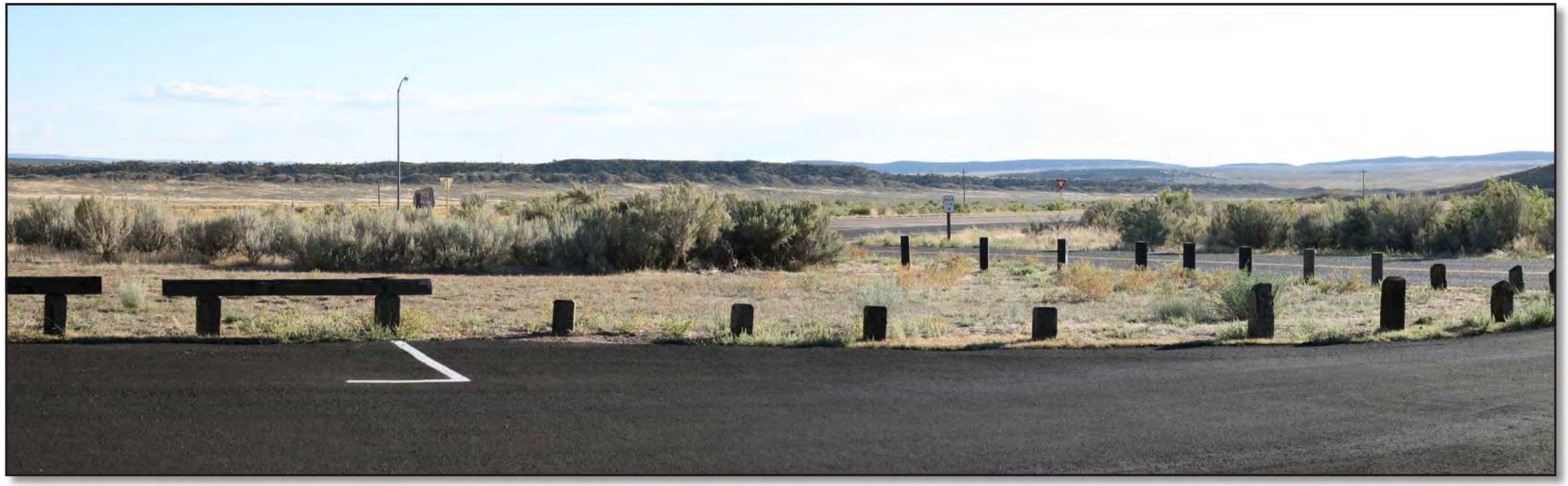
September 2015



Existing Condition – View looking southwest from the Dinosaur National Monument Visitor Center toward BLM VRM Class III lands

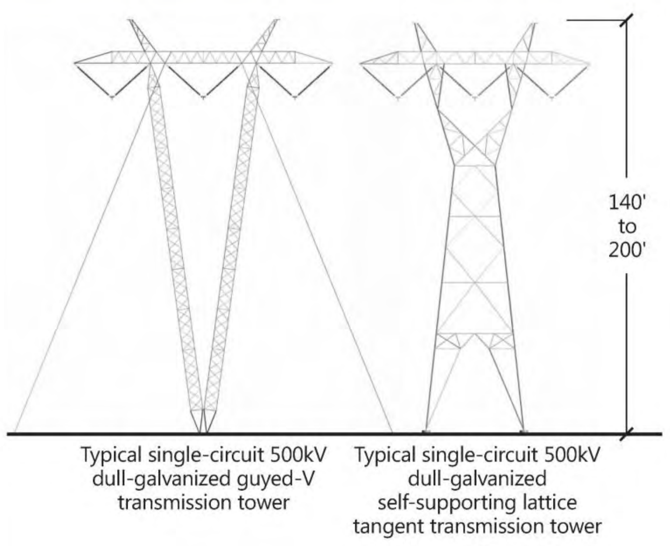

Dinosaur National Monument
Dinosaur
KOP #211
40
Utah
Colorado
Proposed Project Alternative (Links C186, C188)
Existing 345kV Transmission Line
64
Existing 138kV Transmission Line
Deseret Western Railroad
Northwest Pipeline Corp Gas Pipeline
Raven Ridge ACEC
North

View Location: Approximate distance of proposed transmission line from photo location is 1.7 miles.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS


140' to 200'
Typical single-circuit 500kV dull-galvanized guyed-V transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

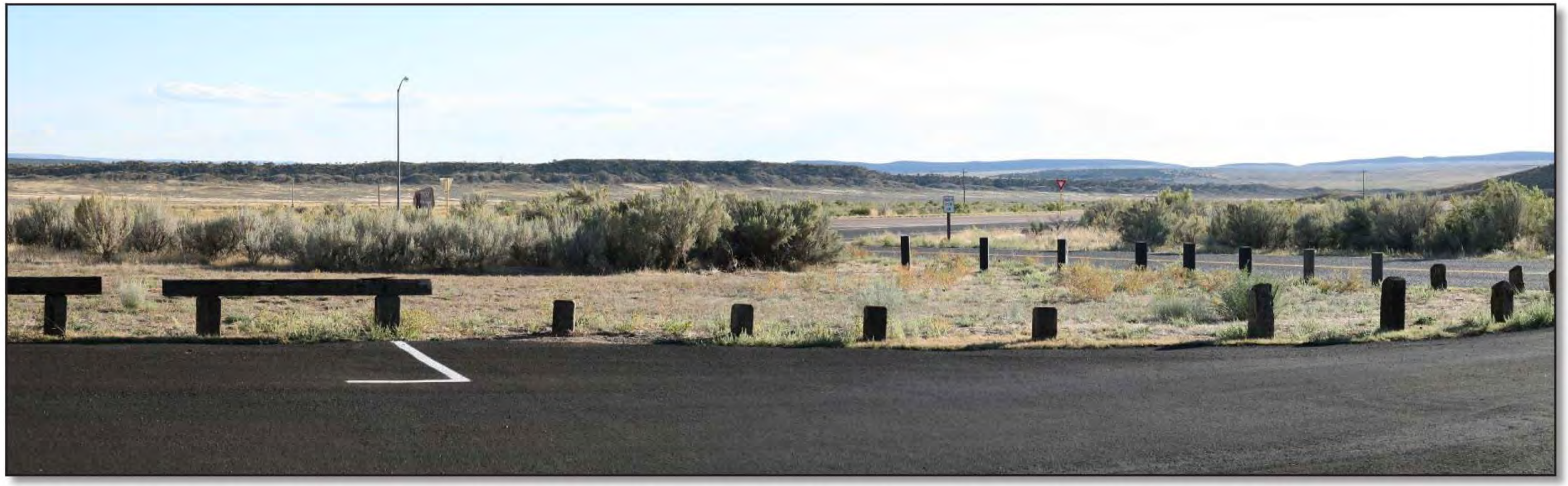
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #211b – Dinosaur National Monument Visitor Center

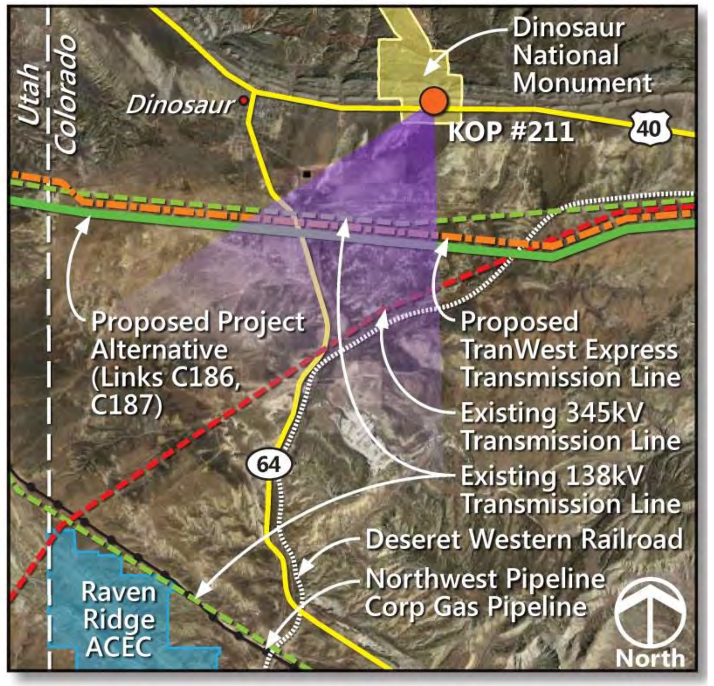
Photo Date and Time: September 26, 2011, 4:39 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 58-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

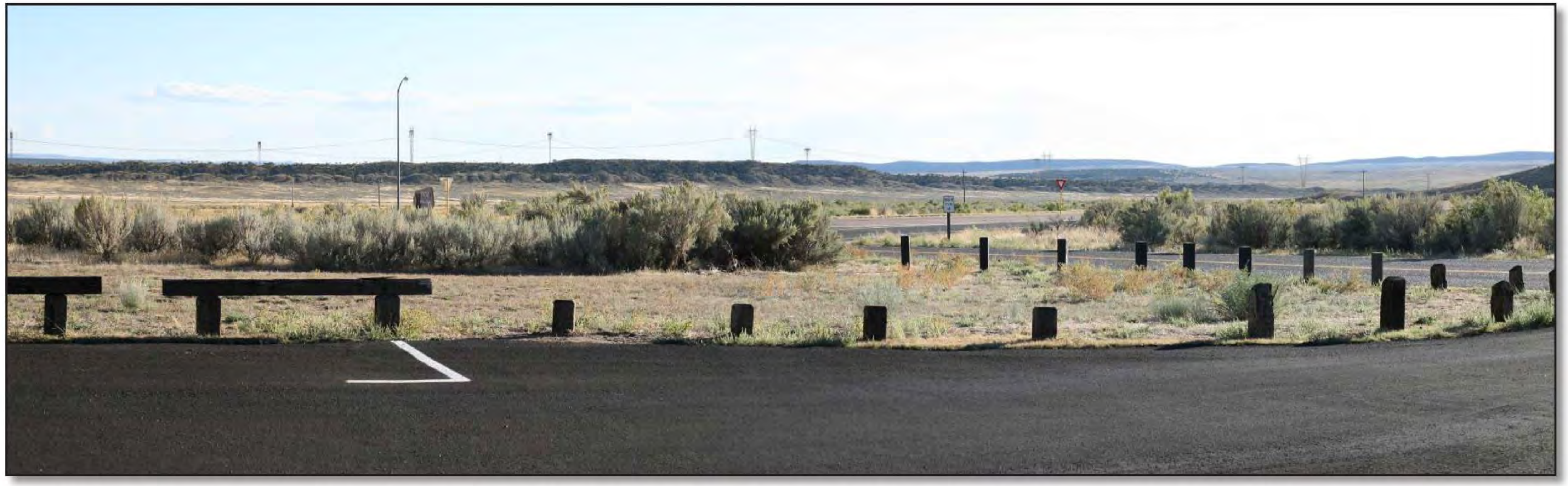
September 2015



Existing Condition – View looking southwest from the Dinosaur National Monument Visitor Center toward BLM VRM Class III lands

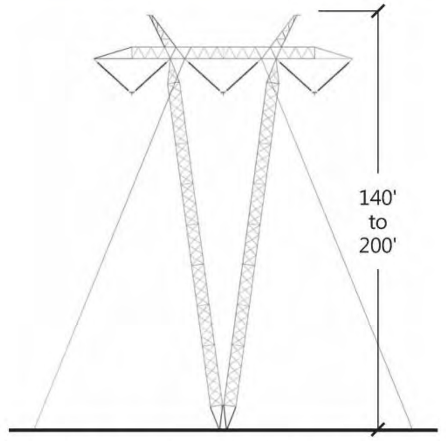

Utah
Colorado
Dinosaur
Dinosaur National Monument
KOP #211
40
Proposed Project Alternative (Links C186, C187)
Proposed TranWest Express Transmission Line
Existing 345kV Transmission Line
Existing 138kV Transmission Line
64
Deseret Western Railroad
Northwest Pipeline Corp Gas Pipeline
Raven Ridge ACEC
North

View Location: Approximate distance of proposed transmission line from photo location is 1.3 miles.



Simulated Condition – View of Alternatives COUT-A, COUT-B, and Colorado-Utah Border Variation 1 and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Photo Date and Time: September 26, 2011, 4:39 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 53-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

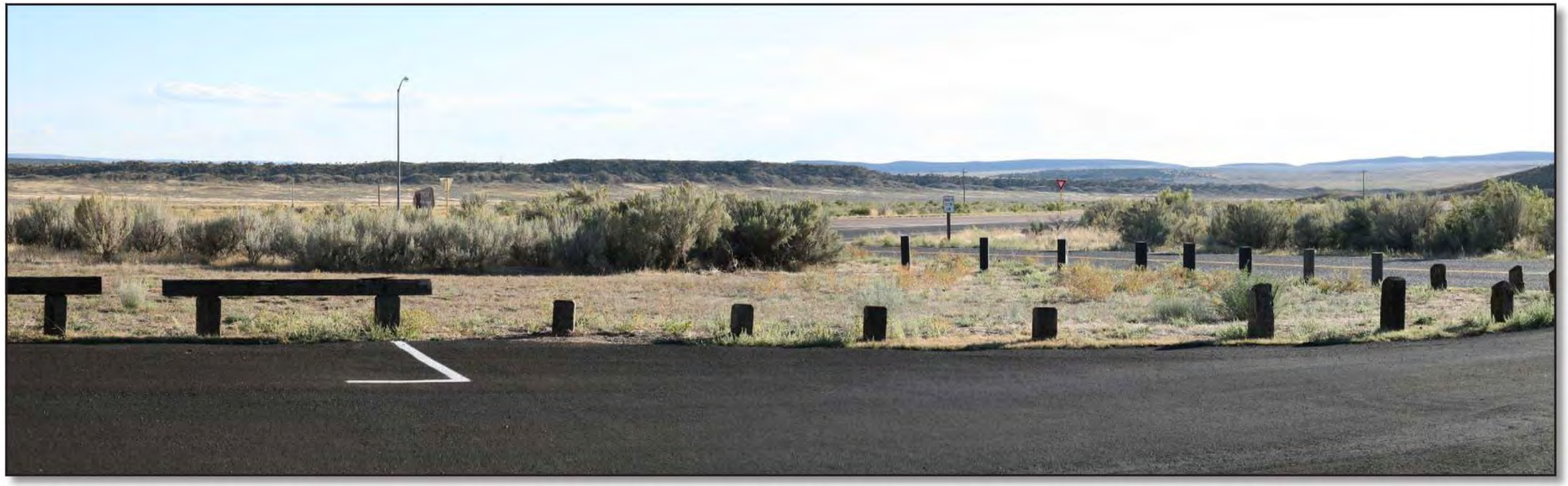
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

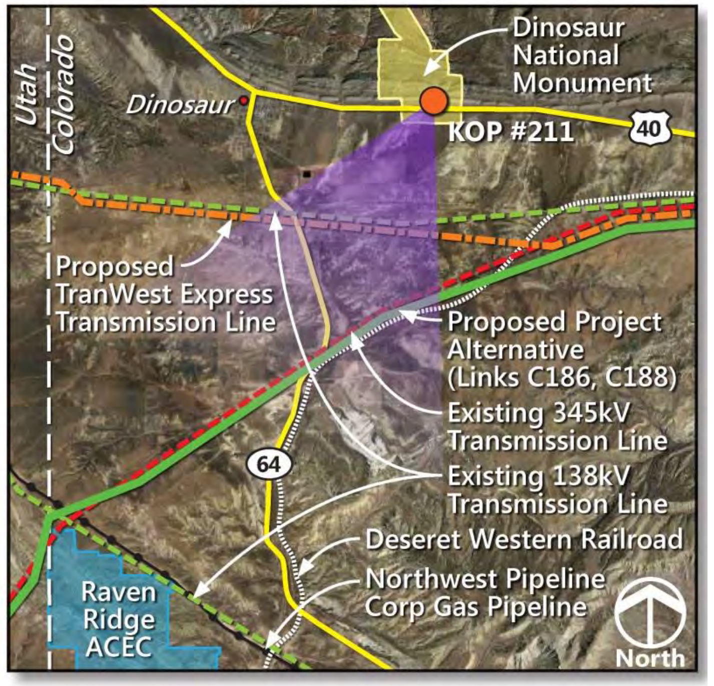
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #211a – Dinosaur National Monument Visitor Center Cumulative Effects

September 2015

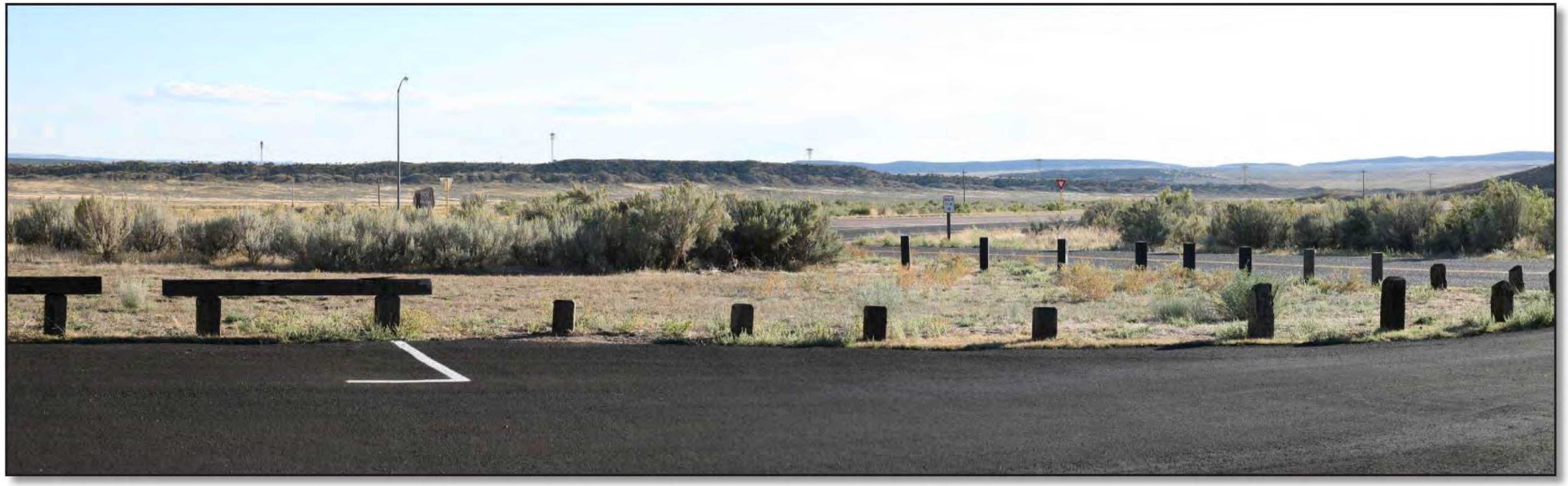


Existing Condition – View looking southwest from the Dinosaur National Monument Visitor Center toward BLM VRM Class III lands



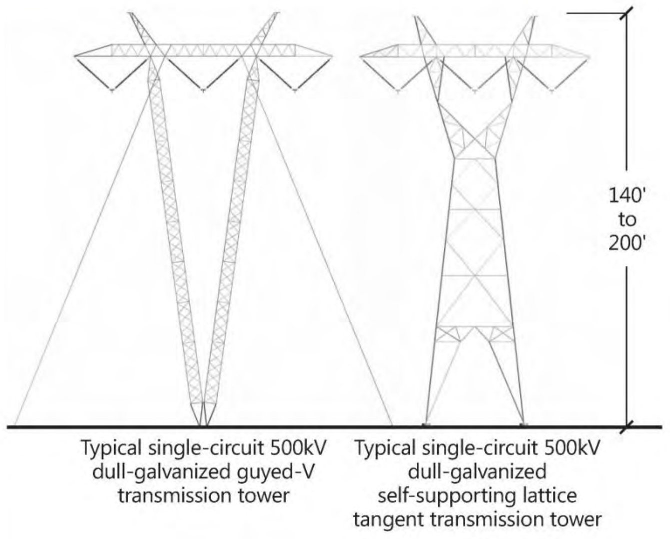
Utah
Colorado
Dinosaur
Dinosaur National Monument
KOP #211
40
Proposed TranWest Express Transmission Line
Proposed Project Alternative (Links C186, C188)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
64
Deseret Western Railroad
Northwest Pipeline Corp Gas Pipeline
Raven Ridge ACEC
North

View Location: Approximate distance of proposed transmission line from photo location is 1.7 miles.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



140' to 200'
Typical single-circuit 500kV dull-galvanized guyed-V transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: September 26, 2011, 4:39 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 53-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

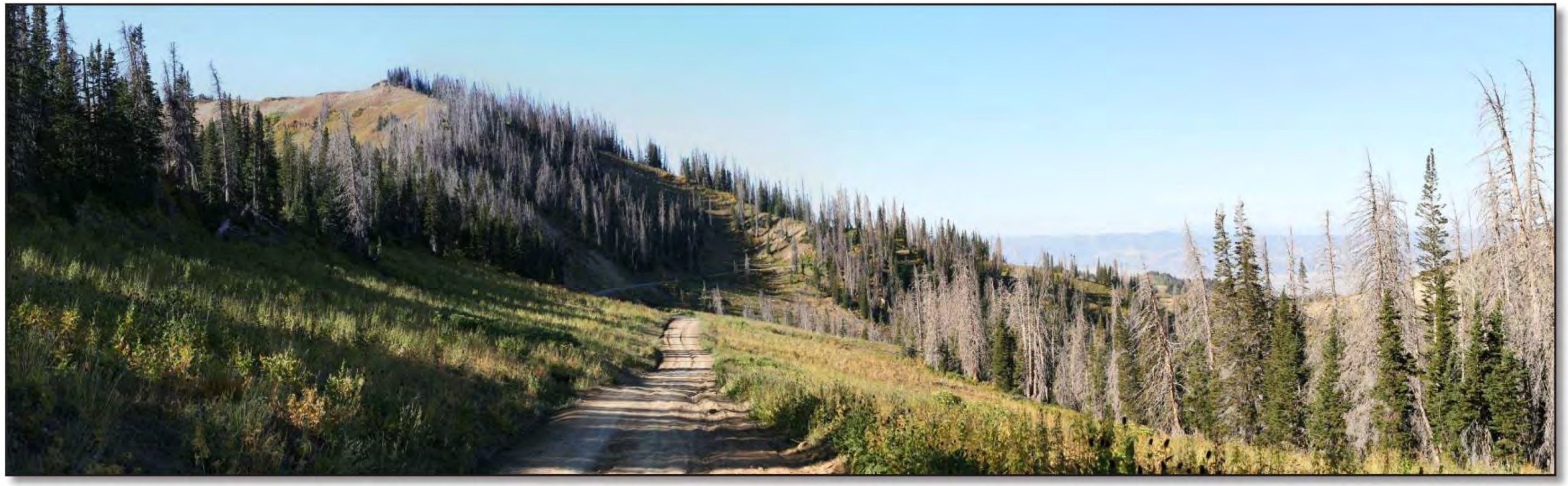
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

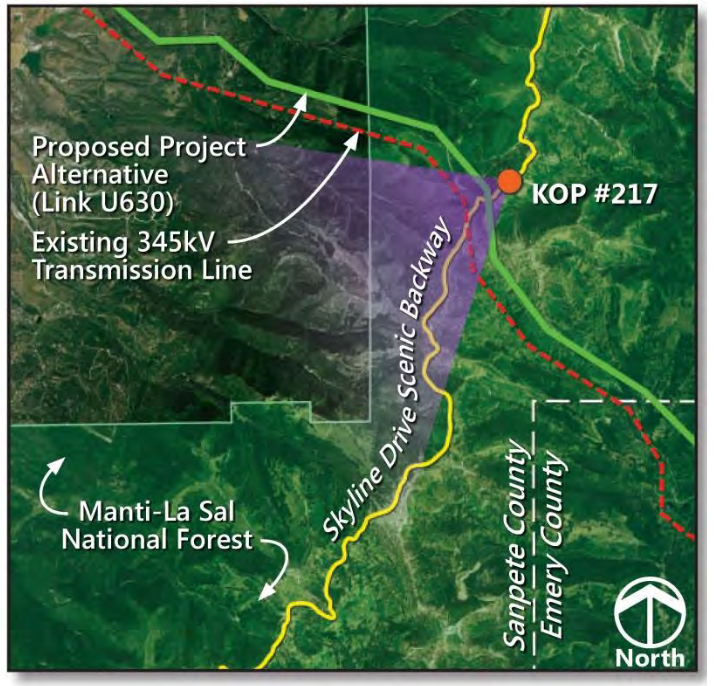
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #211b – Dinosaur National Monument Visitor Center Cumulative Effects

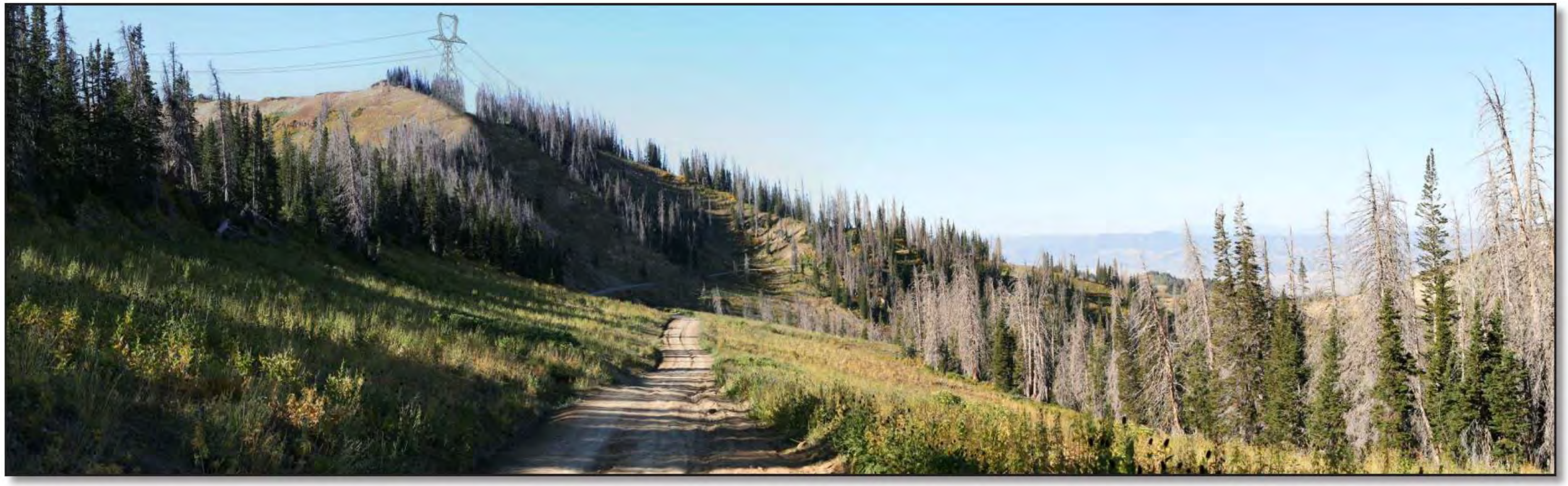
September 2015



Existing Condition – View looking southwest from the Skyline Drive Scenic Backway in the Manti-La Sal National Forest toward an existing 345kV transmission line (not visible)

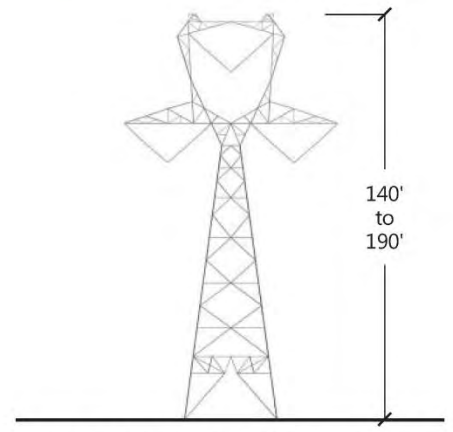

Proposed Project Alternative (Link U630)
Existing 345kV Transmission Line
KOP #217
Skyline Drive Scenic Backway
Manti-La Sal National Forest
Sanpete County
Emery County
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I

500kV TOWER STRUCTURE DIAGRAM

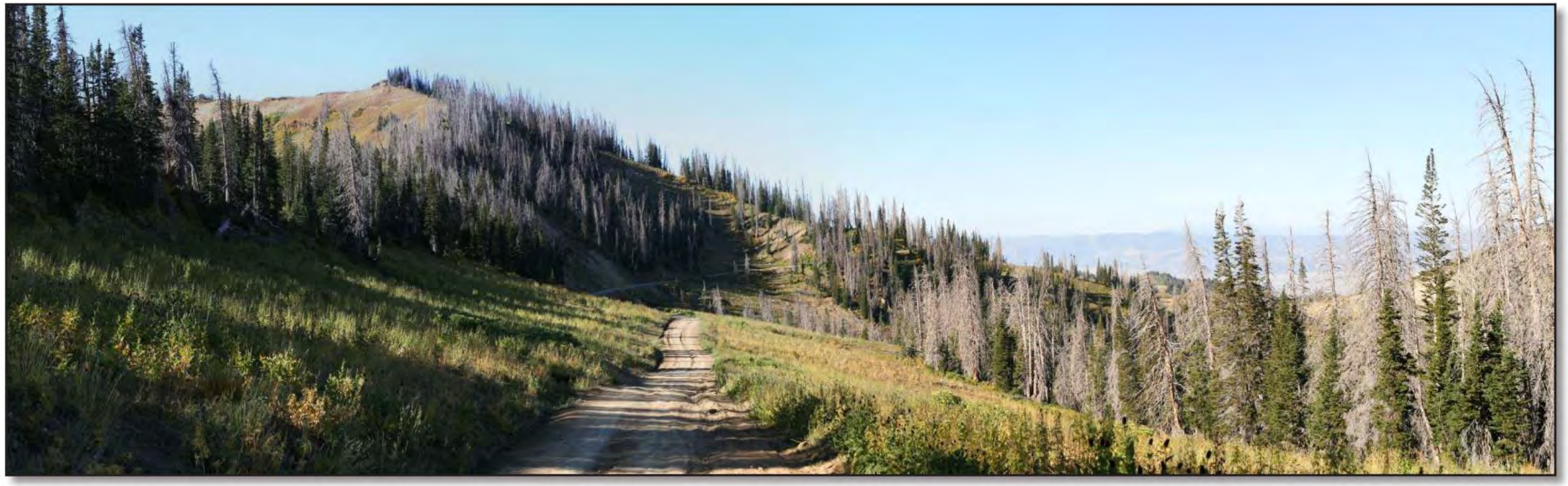


Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

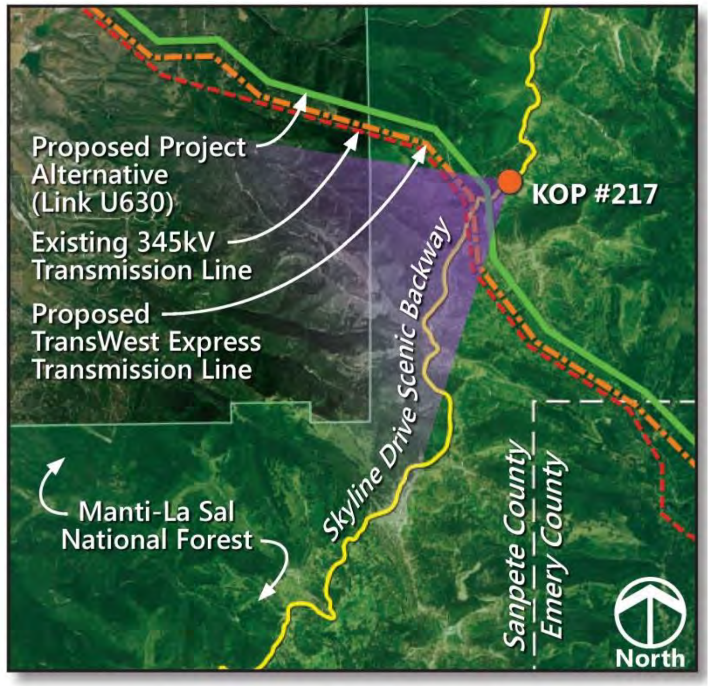
Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 27, 2011, 10:02 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 82-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

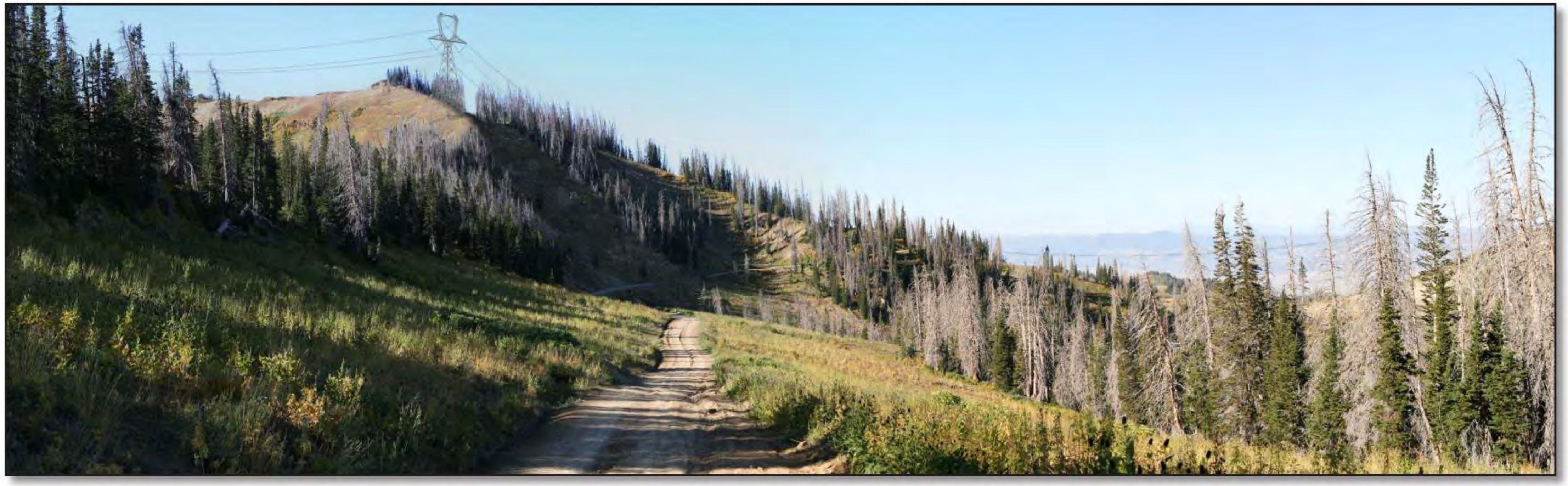
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking southwest from the Skyline Drive Scenic Backway in the Manti-La Sal National Forest toward an existing 345kV transmission line (not visible)

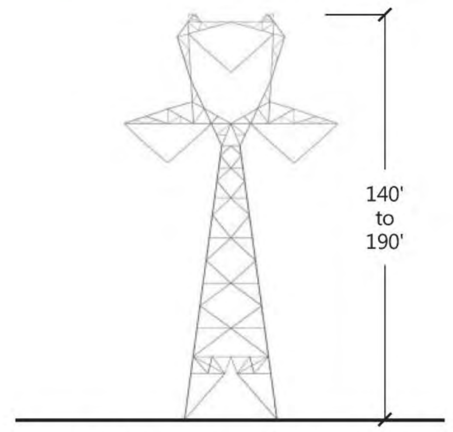

Proposed Project Alternative (Link U630)
Existing 345kV Transmission Line
Proposed TransWest Express Transmission Line
KOP #217
Skyline Drive Scenic Backway
Manti-La Sal National Forest
Sanpete County
Emery County
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I and the Proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 27, 2011, 10:02 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 82-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

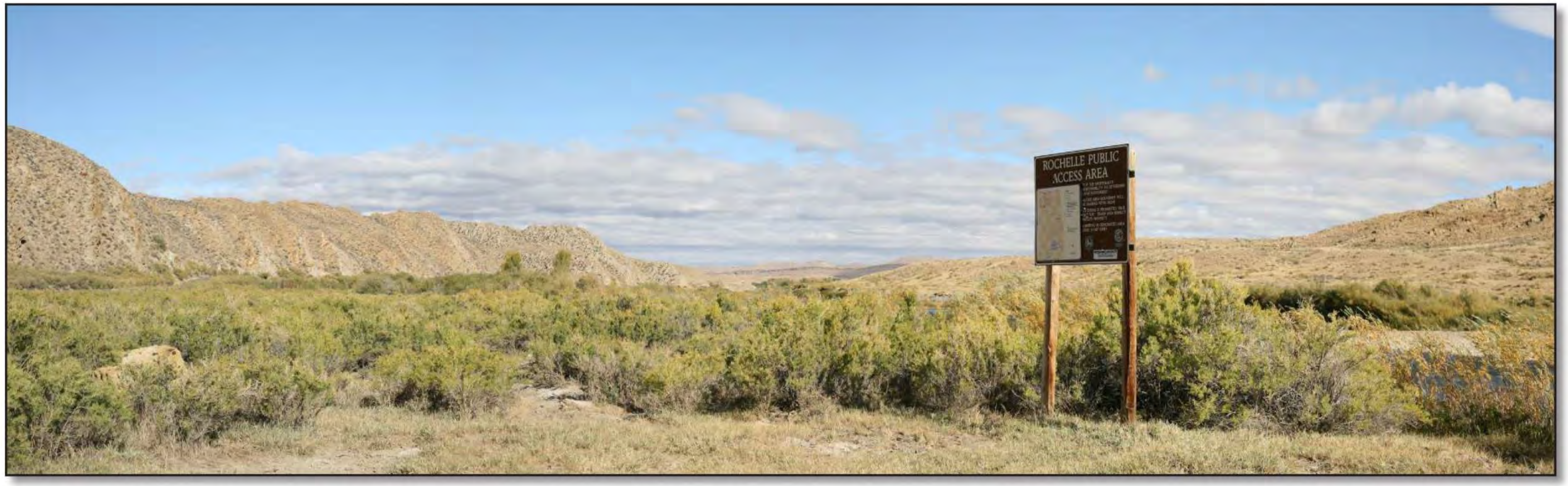
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

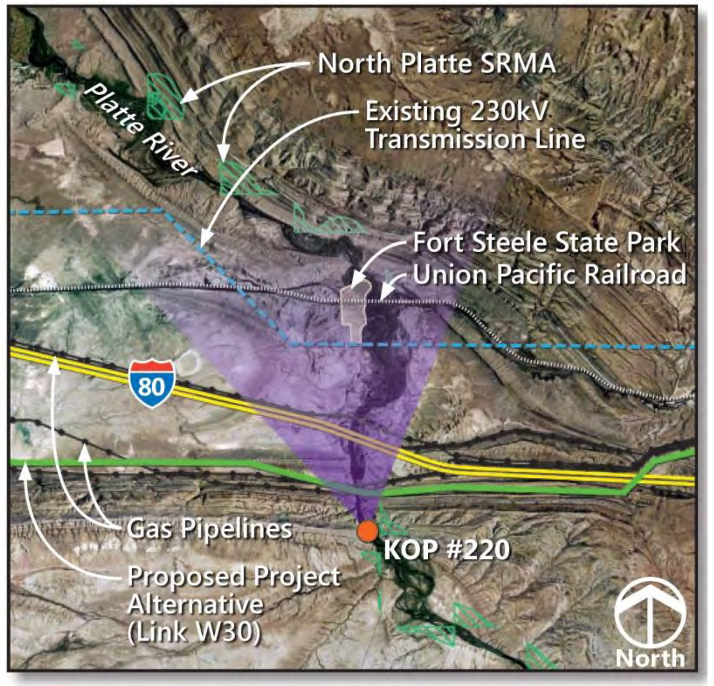
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #217 – Skyline Drive Scenic Backway
Cumulative Effects

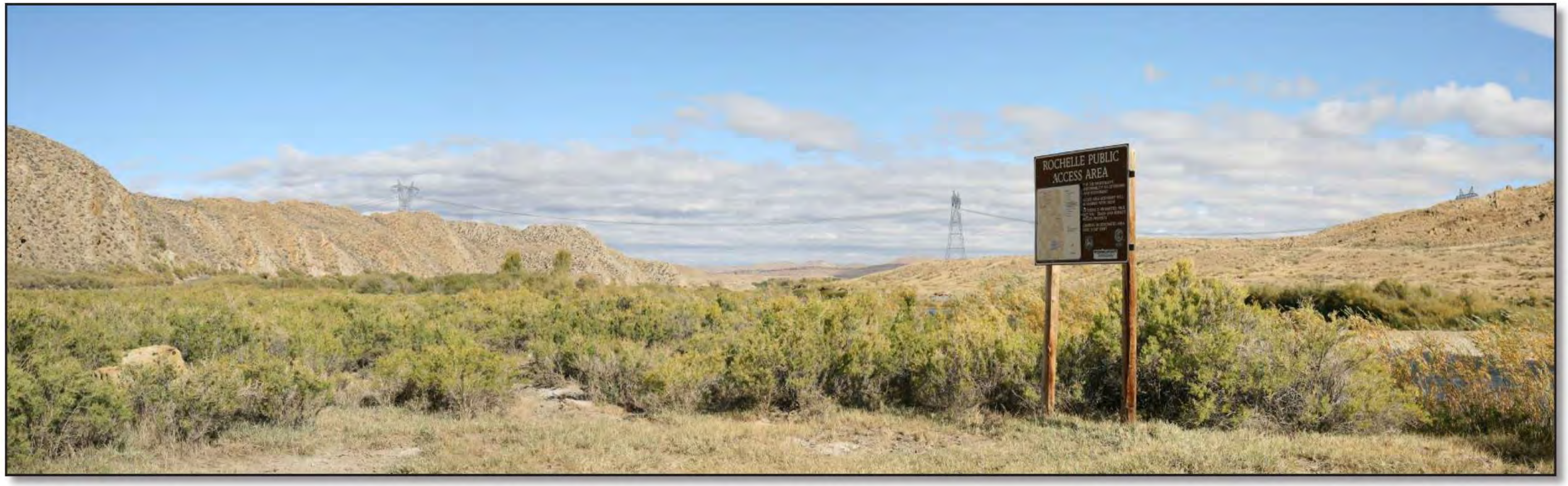
September 2015



Existing Condition – View looking north from Carbon County Road 347, adjacent to the North Platte SRMA, toward BLM VRM Class IV lands

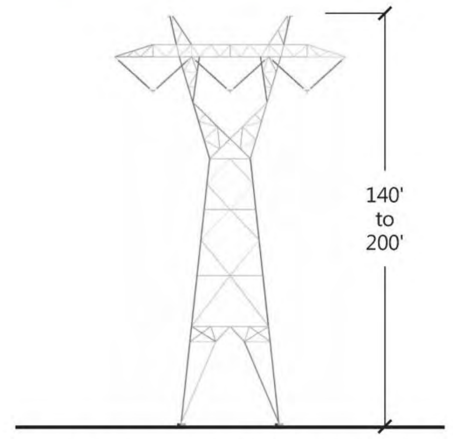


View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F

500kV TOWER STRUCTURE DIAGRAM



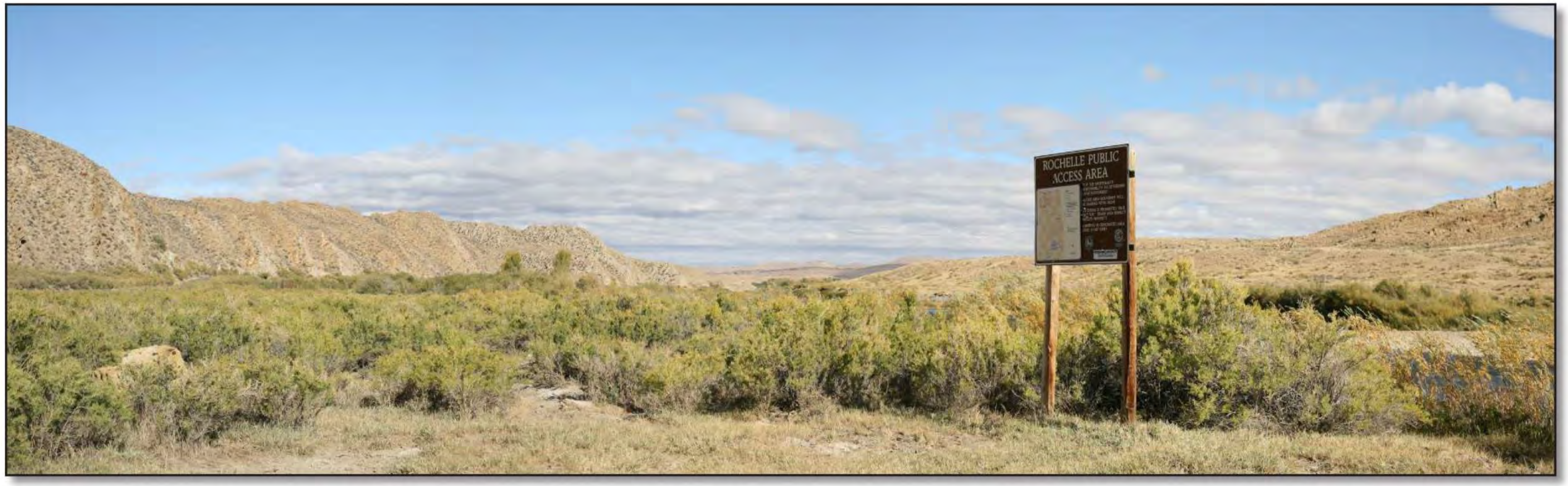
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

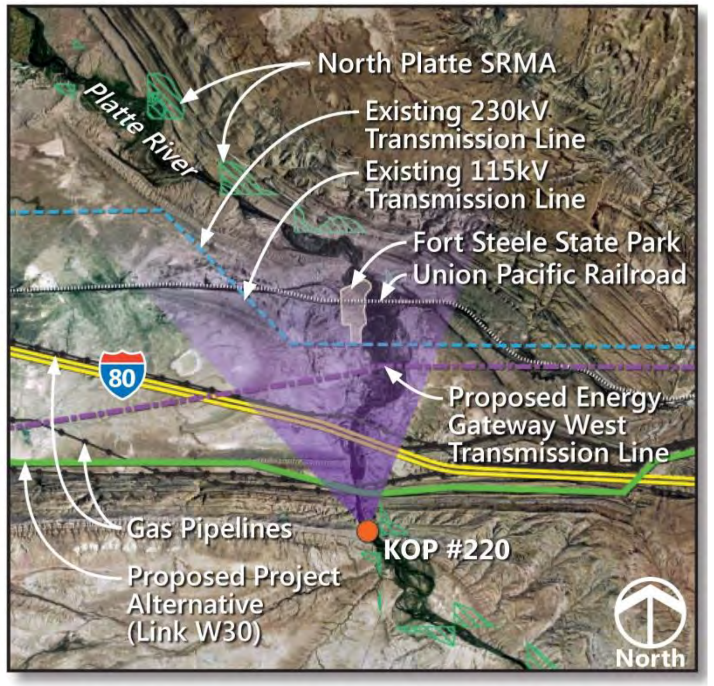
KOP #220 – North Platte River SRMA

Photo Date and Time: October 7, 2011, 10:09 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 65-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

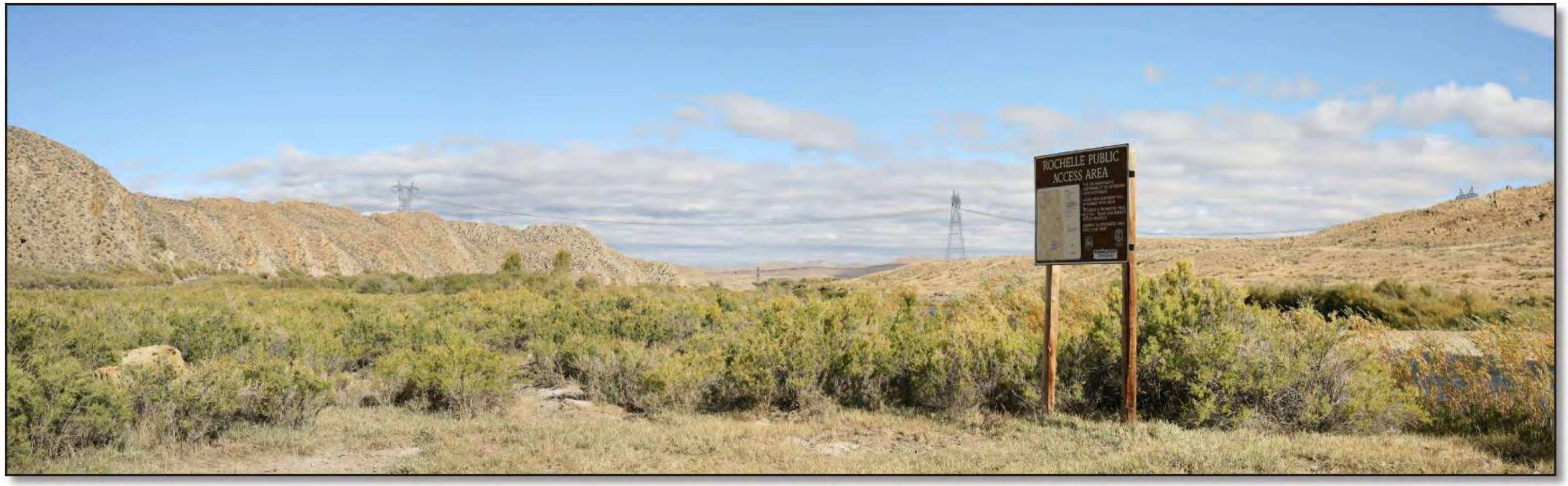
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking north from Carbon County Road 347, adjacent to the North Platte SRMA, toward BLM VRM Class IV lands

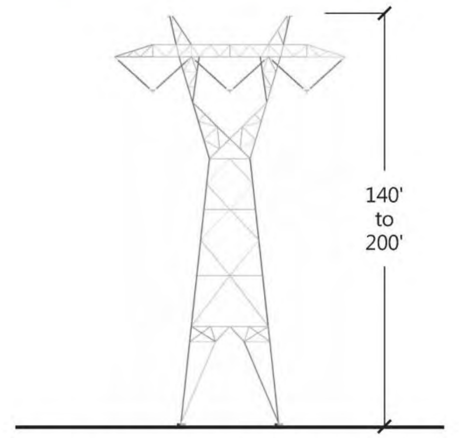

Platte River
North Platte SRMA
Existing 230kV Transmission Line
Existing 115kV Transmission Line
Fort Steele State Park
Union Pacific Railroad
80
Proposed Energy Gateway West Transmission Line
Gas Pipelines
KOP #220
Proposed Project Alternative (Link W30)
North

View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F and the proposed Energy Gateway West transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: October 7, 2011, 10:09 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 65-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

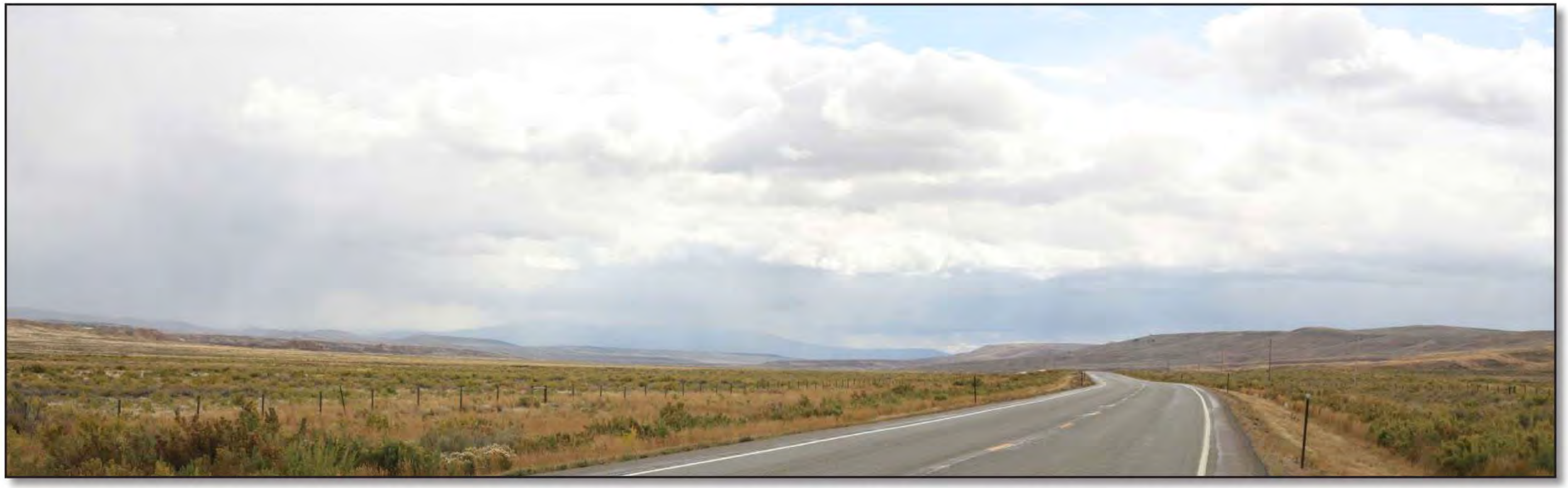
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed Energy Gateway West project are conceptual and shown for reference only.

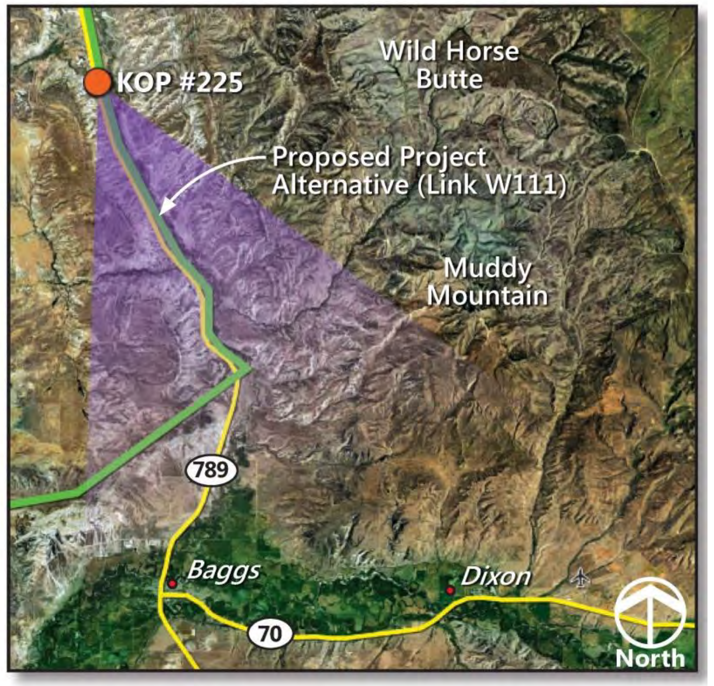
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #220 – North Platte River SRMA Cumulative Effects

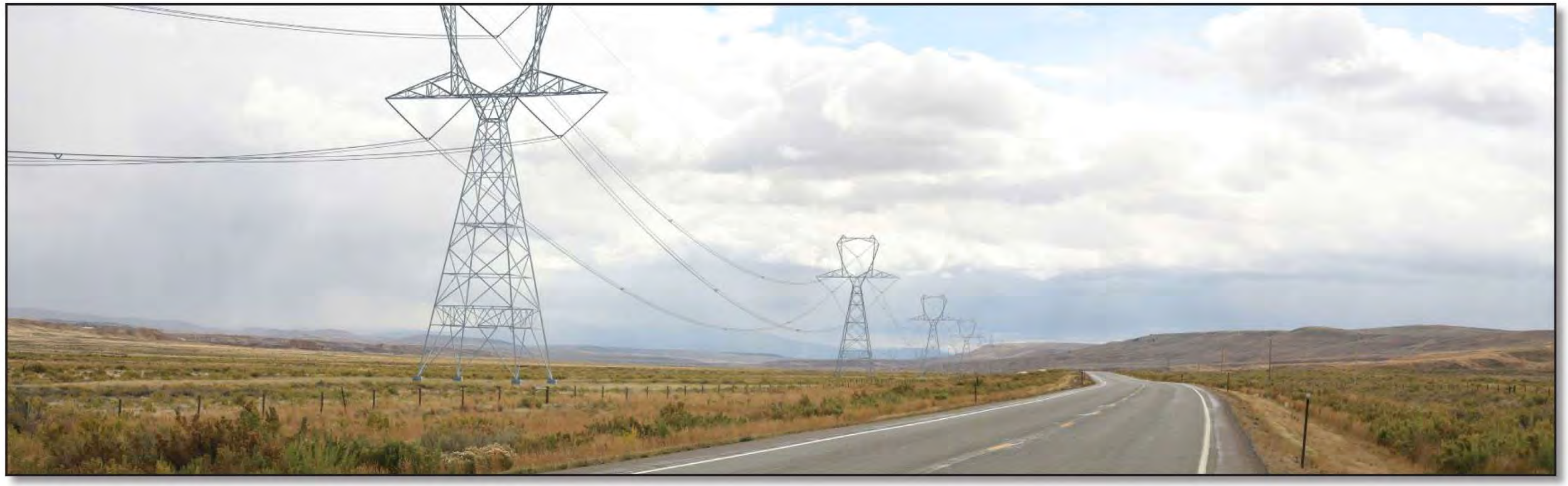
September 2015



Existing Condition – View looking south from Wyoming Highway 789, north of Baggs, Wyoming, toward BLM VRM Class III lands

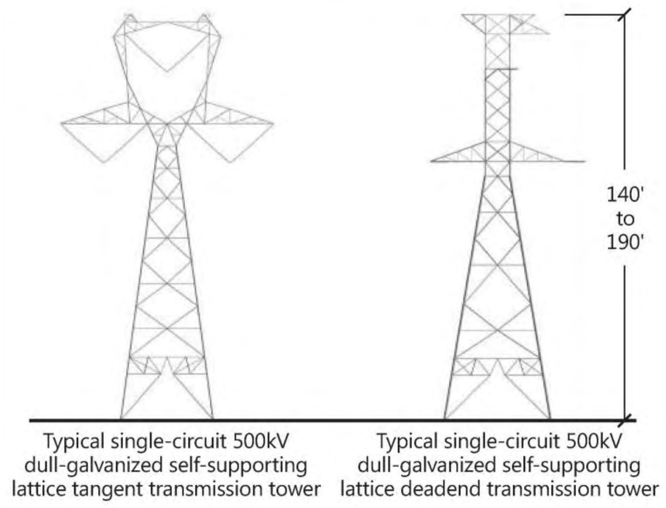


View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Alternative WYCO-D

500kV TOWER STRUCTURE DIAGRAMS


140' to 190'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

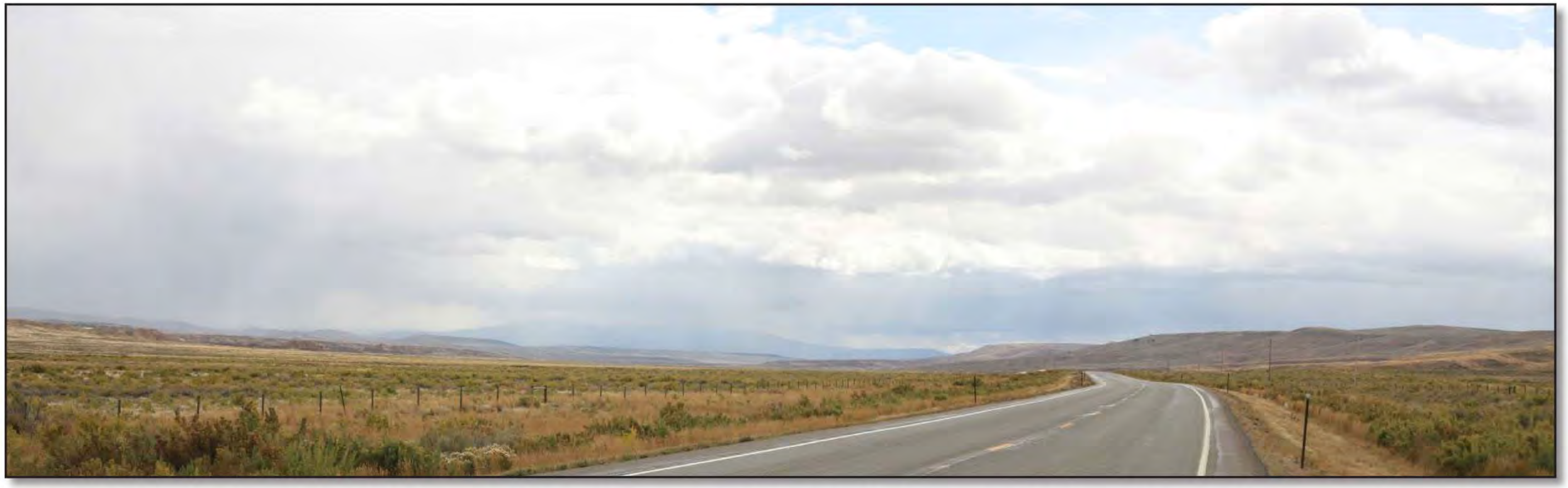
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #225 – Outlaw Trail Loop Scenic Drive (Wyoming Highway 789 North of Baggs)

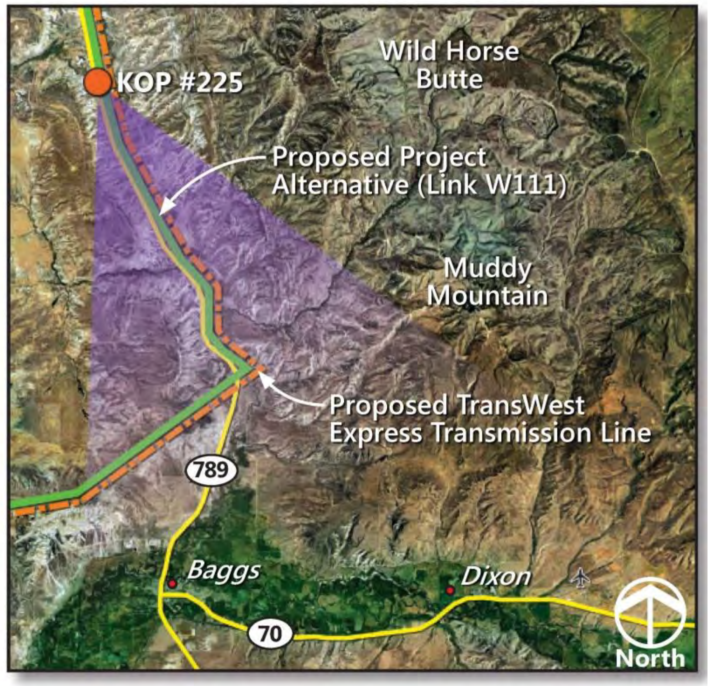
Photo Date and Time: October 11, 2011, 1:16 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 50-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

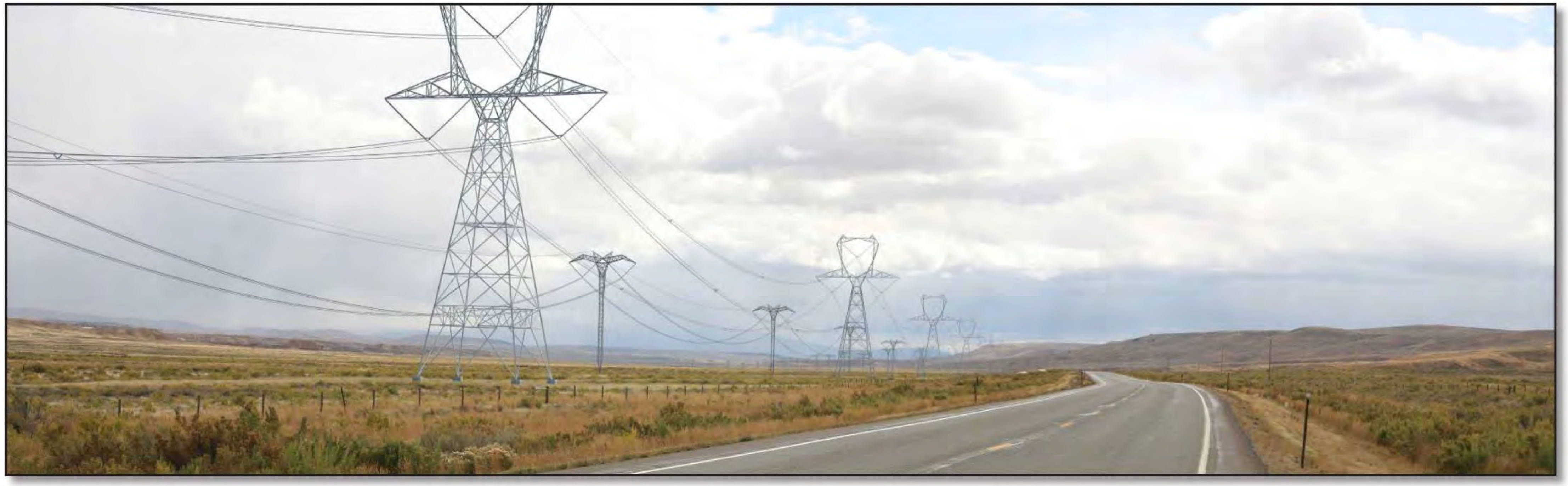
September 2015



Existing Condition – View looking south from Wyoming Highway 789, north of Baggs, Wyoming, toward BLM VRM Class III lands

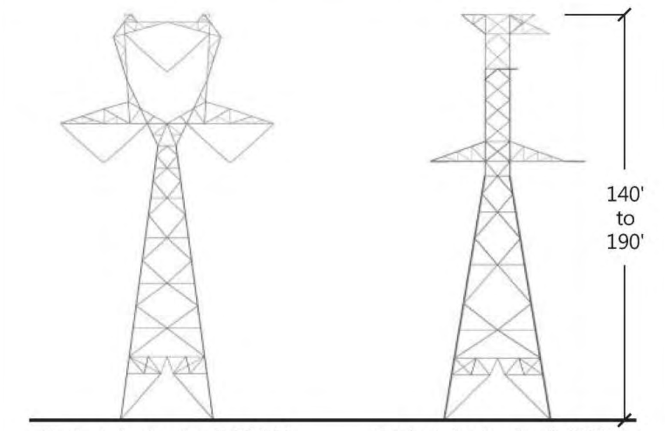

KOP #225
Wild Horse Butte
Proposed Project Alternative (Link W111)
Muddy Mountain
Proposed TransWest Express Transmission Line
789
Baggs
Dixon
70
North

View Location: The proposed transmission line would be located adjacent to the photo location.



Simulated Condition – View of Alternative WYCO-D and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: October 11, 2011, 1:16 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 50-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

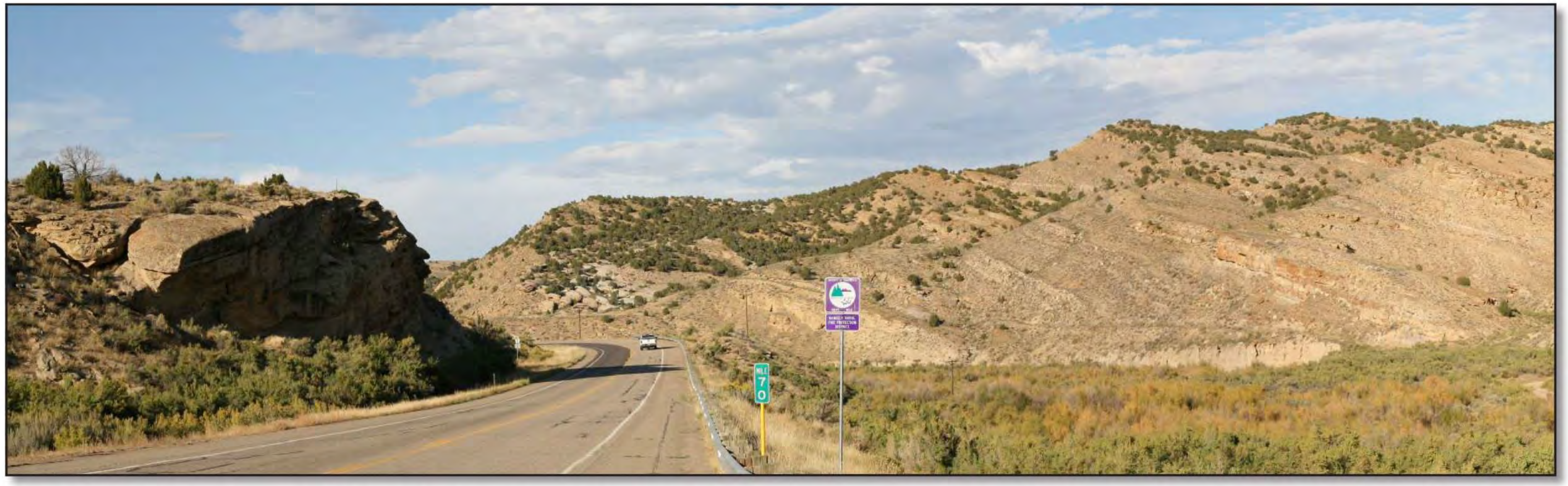
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

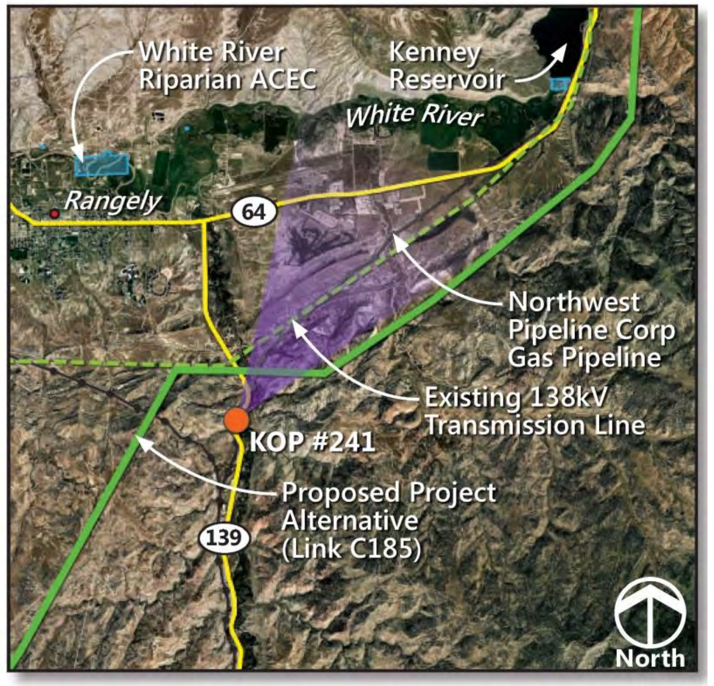
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #225 – Outlaw Trail Loop Scenic Drive (Wyoming Highway 789 North of Baggs Cumulative Effects

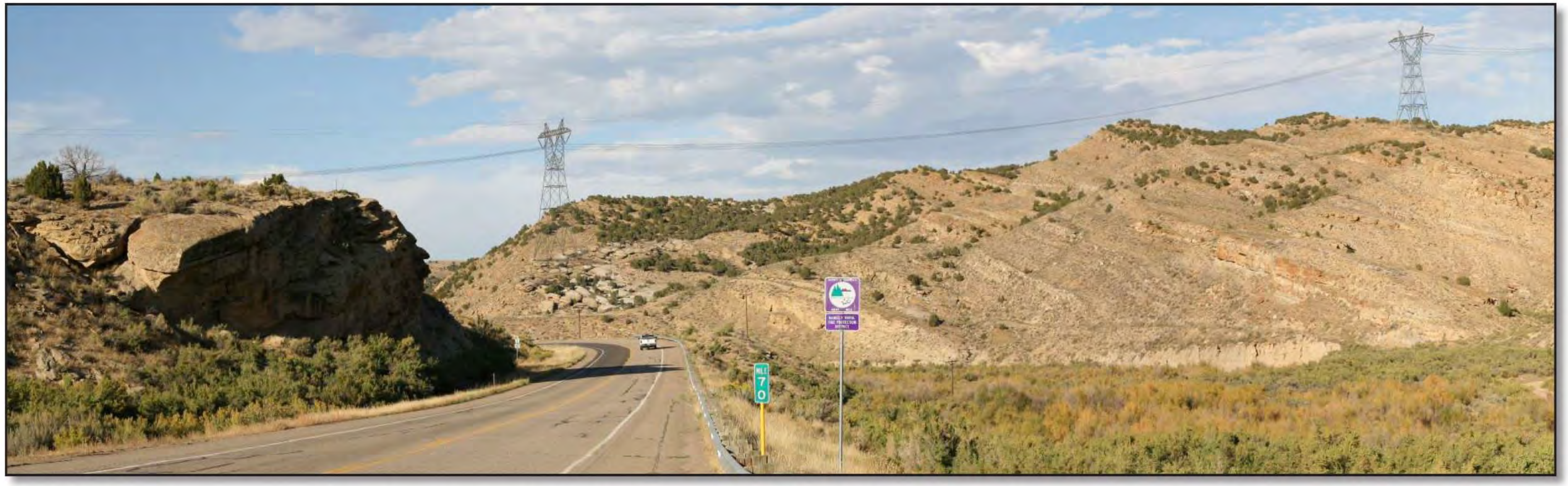
September 2015



Existing Condition – View looking northeast from the Dinosaur Diamond Scenic Byway (Colorado State Highway 139) in the Canyon Pintado National Historic District within BLM VRM Class III lands

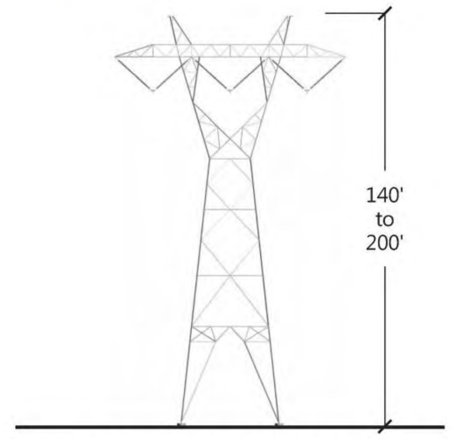

White River Riparian ACEC
Kenney Reservoir
White River
Rangely
64
Northwest Pipeline Corp Gas Pipeline
Existing 138kV Transmission Line
KOP #241
Proposed Project Alternative (Link C185)
139
North

View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

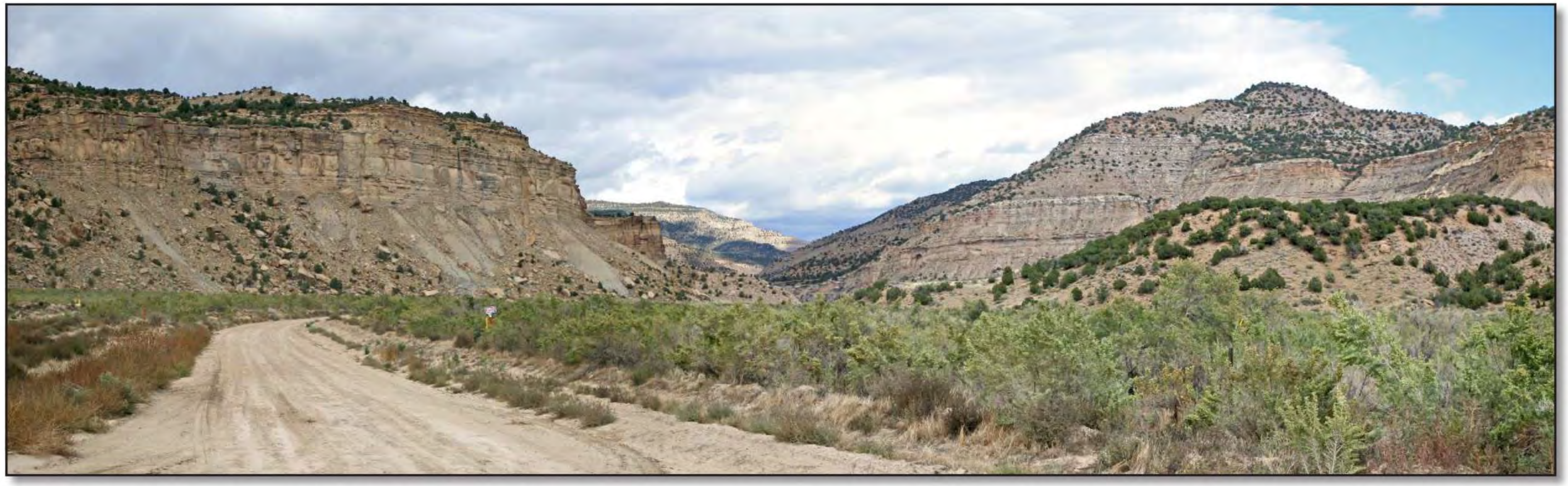
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #241 – Dinosaur Diamond in Canyon Pintado NHD (Colorado State Highway 139)

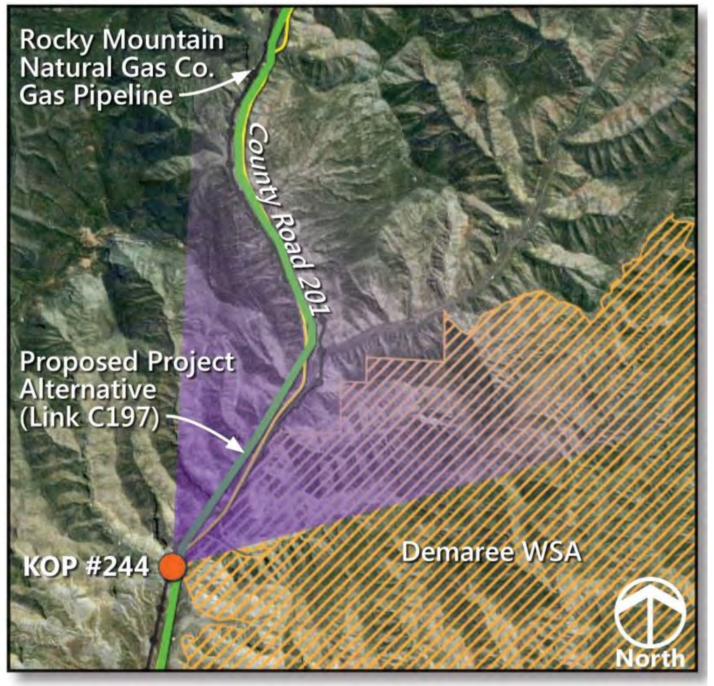
Photo Date and Time: October 3, 2011, 5:07 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 45-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

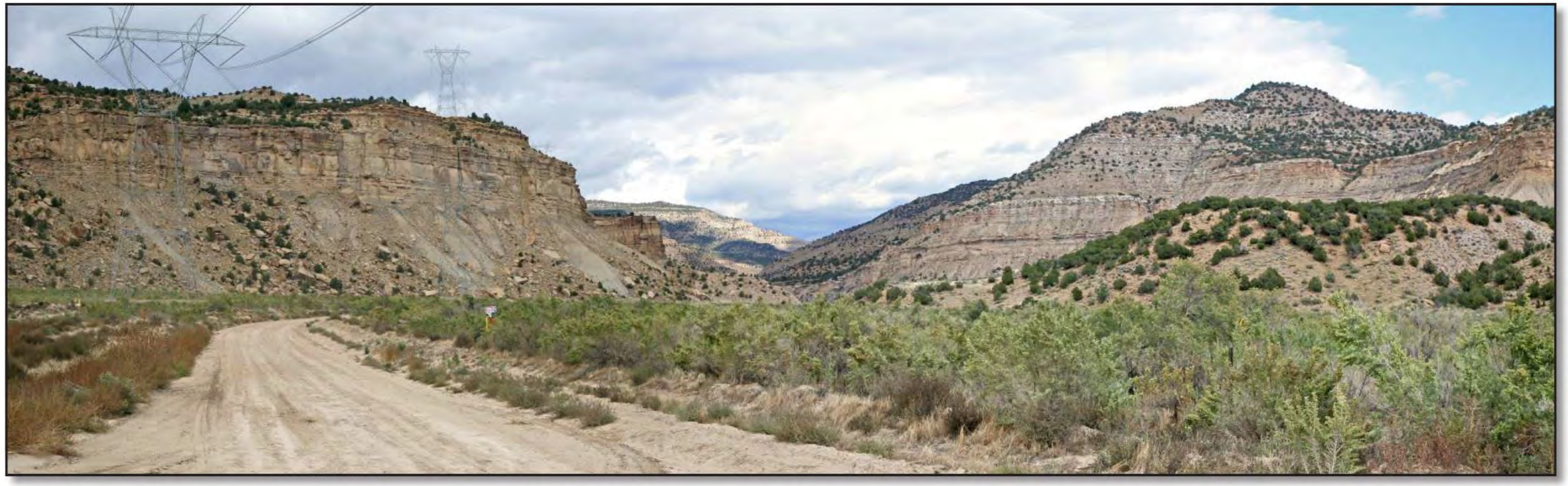
September 2015



Existing Condition – View looking north from Garfield County Road 201, adjacent to the Demaree Wilderness Study Area, toward BLM VRM Class III lands

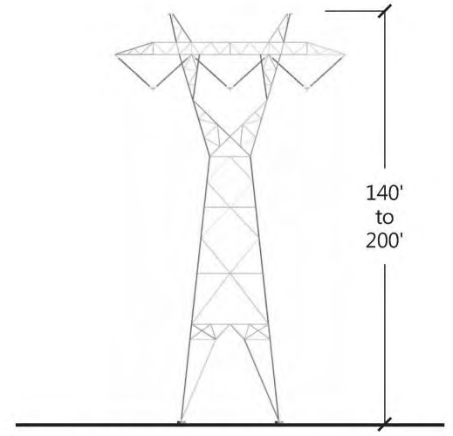

Rocky Mountain Natural Gas Co. Gas Pipeline
County Road 201
Proposed Project Alternative (Link C197)
KOP #244
Demaree WSA
North

View Location: The photo location is adjacent to the proposed transmission line.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

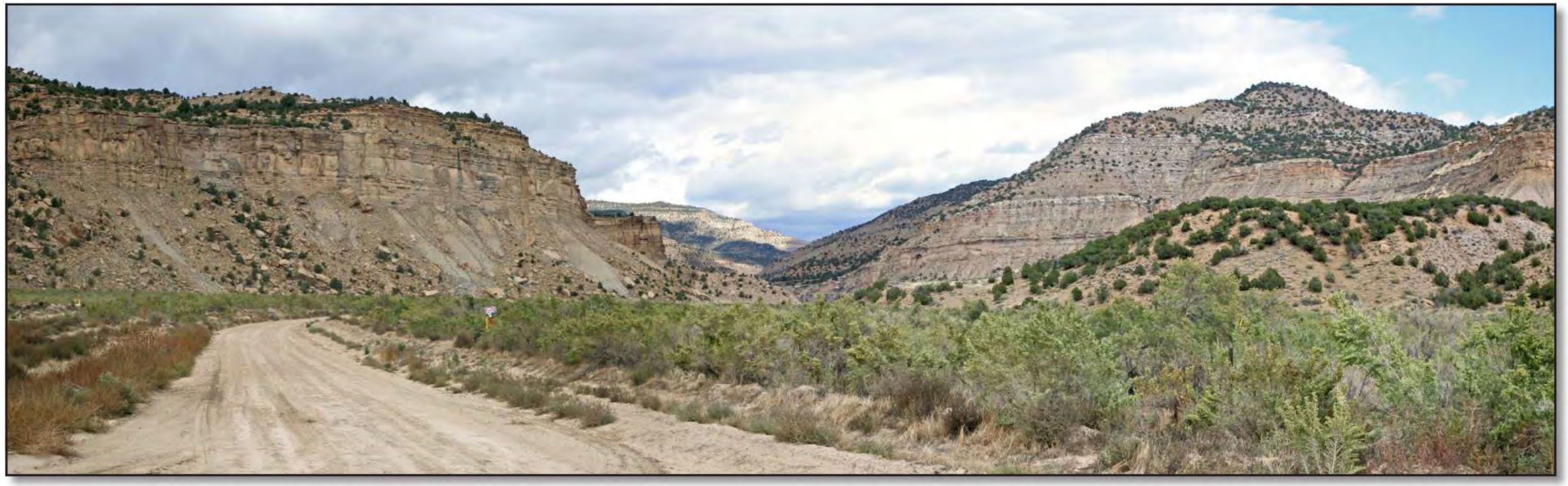
Photo Date and Time: October 11, 2011, 2:13 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 72-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

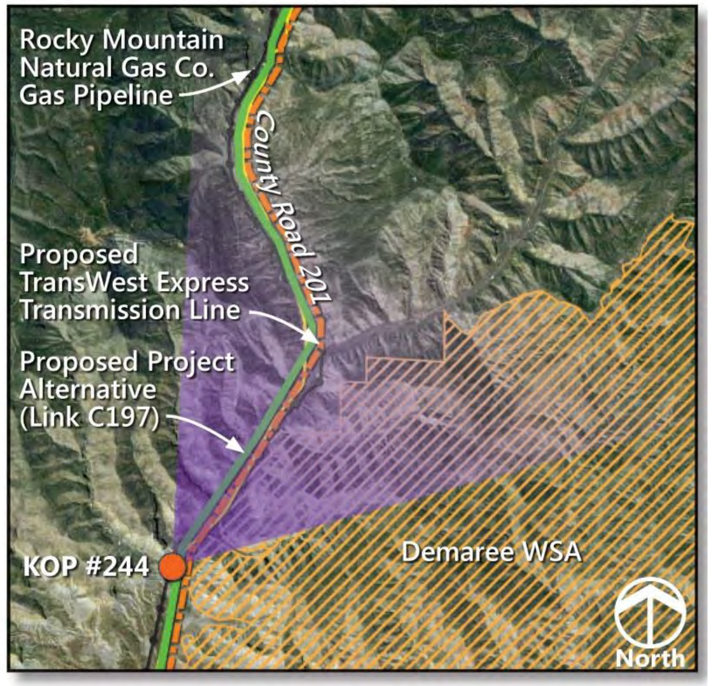
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #244 – Garfield County Road 201 (South of Baxter Pass)

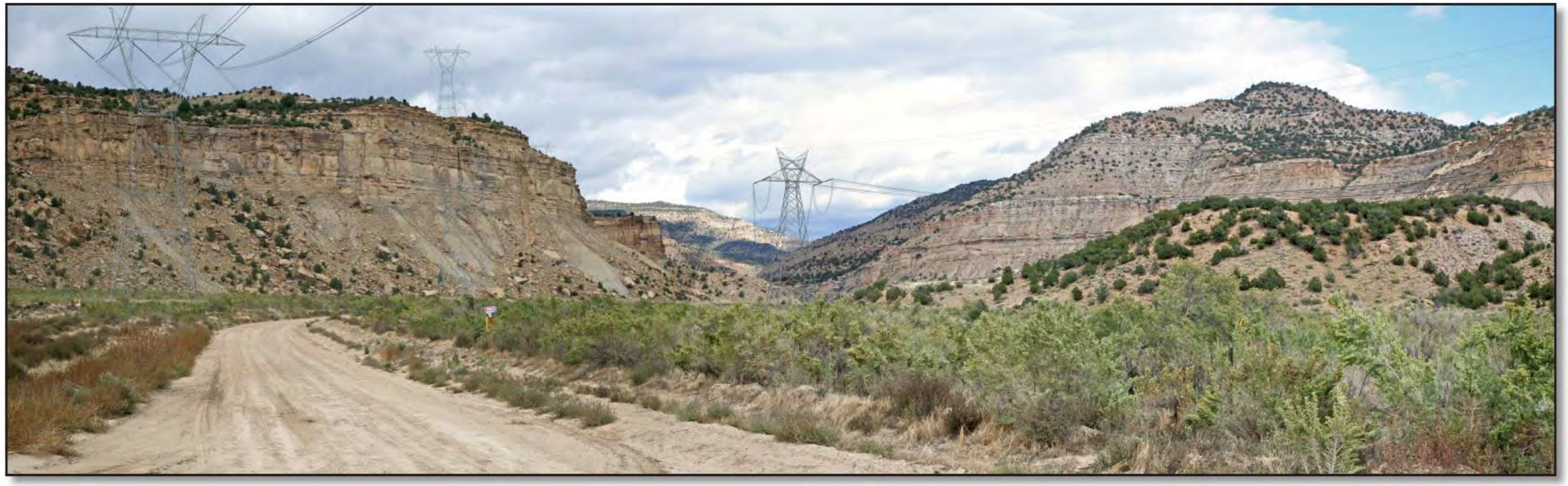
Exhibit M3
Visual Simulations



Existing Condition – View looking north from Garfield County Road 201, adjacent to the Demaree Wilderness Study Area, toward BLM VRM Class III lands

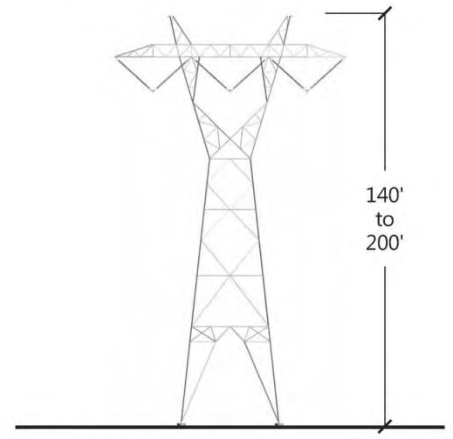

Rocky Mountain Natural Gas Co. Gas Pipeline
County Road 201
Proposed TransWest Express Transmission Line
Proposed Project Alternative (Link C197)
KOP #244
Demaree WSA
North

View Location: The photo location is adjacent to the proposed transmission line.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: October 11, 2011, 2:13 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 72-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

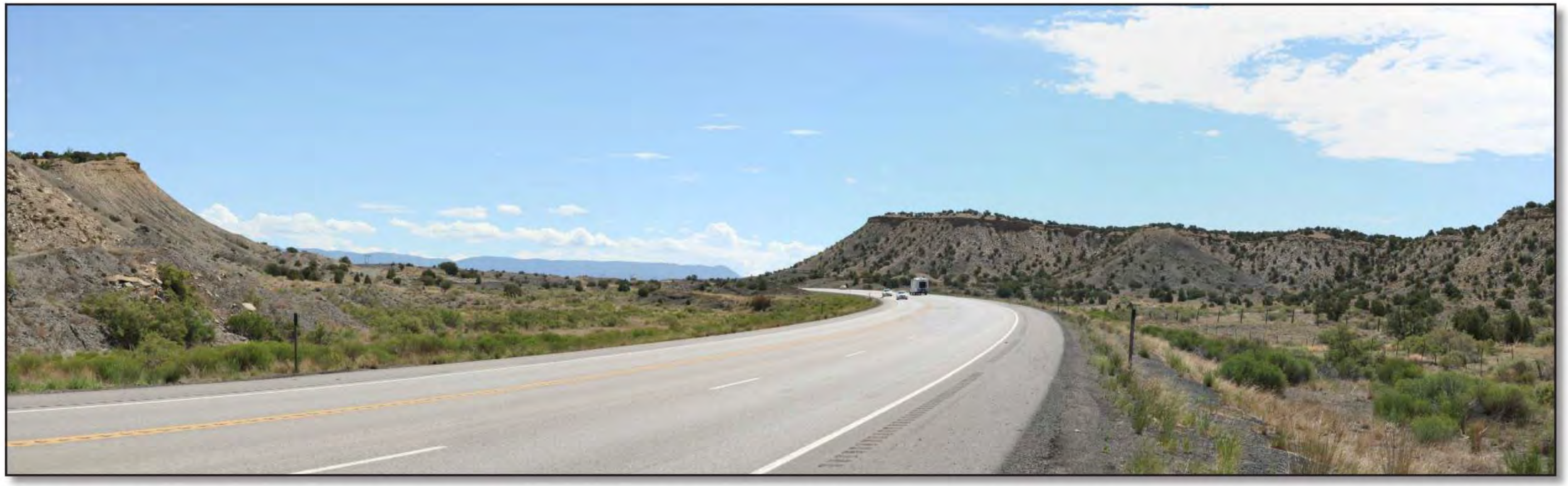
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

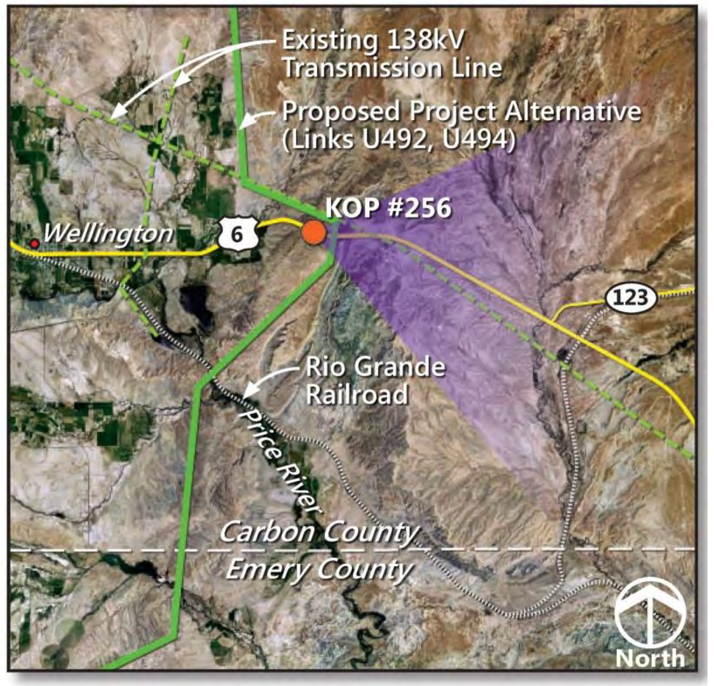
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #244 – Garfield County Road 201 (South of Baxter Pass) Cumulative Effects

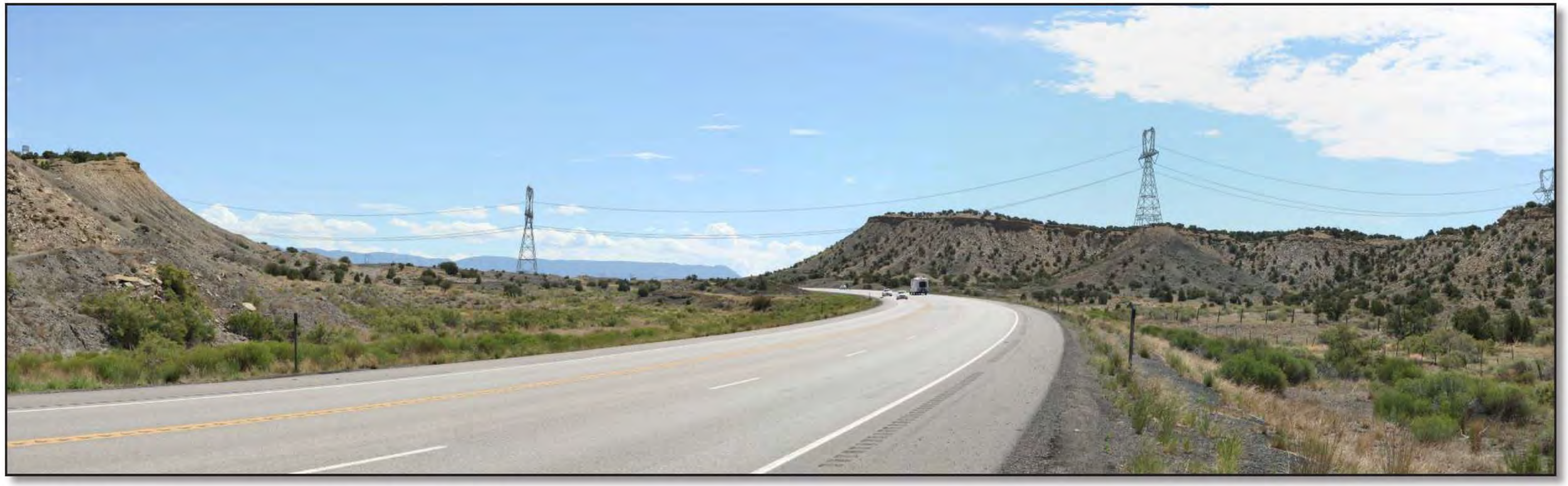
September 2015



Existing Condition – View looking east from U.S. Highway 6 east of Wellington, Utah toward an existing 138kV transmission line and BLM VRM Class III lands

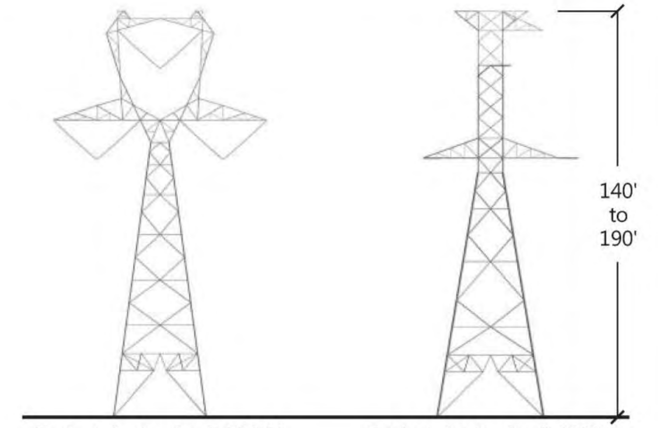


View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternative COUT-I

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

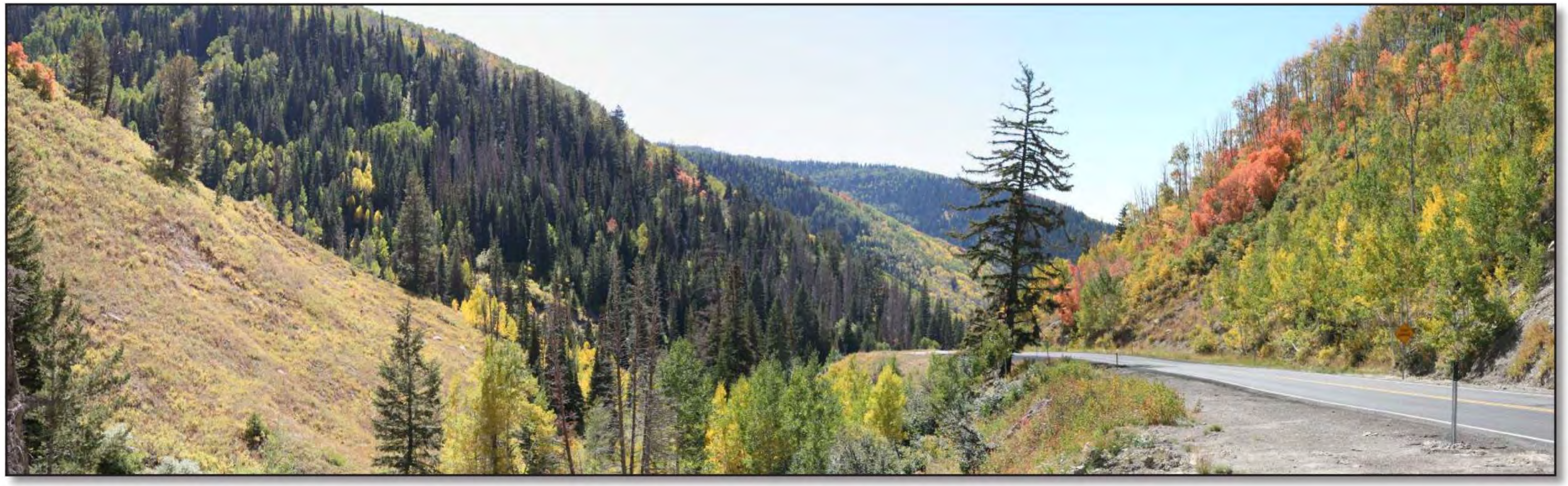
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #256 – U.S. Highway 6 east of Wellington

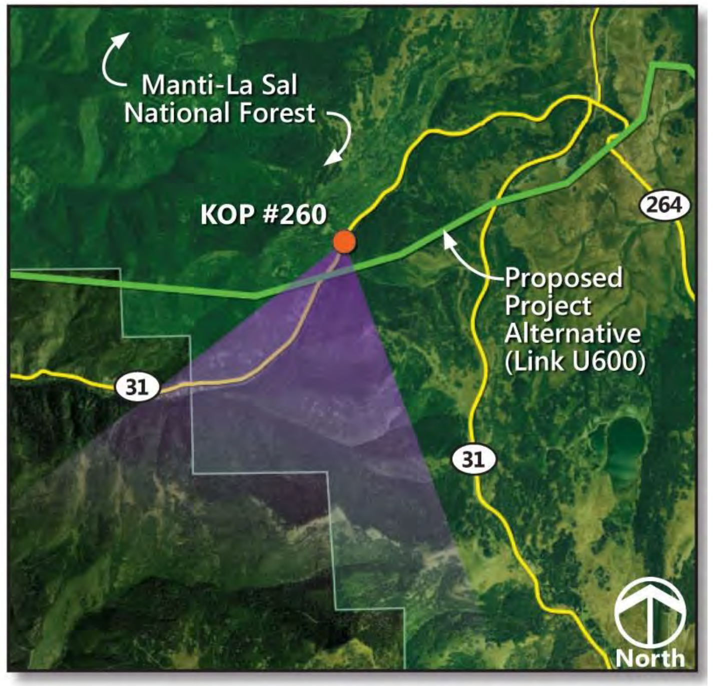
Photo Date and Time: July 23, 2012, 10:52 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 76-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

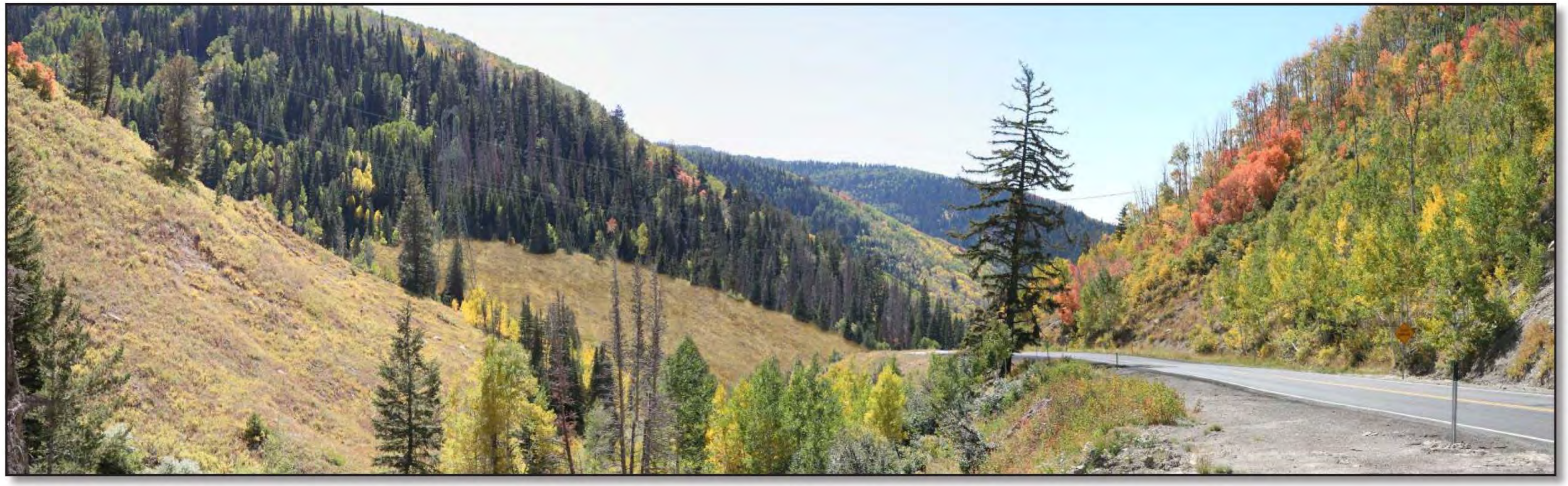
September 2015



Existing Condition – View looking south from Utah State Route 31 within the Manti-La Sal National Forest

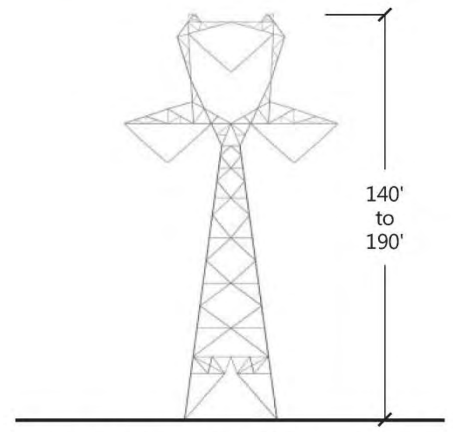


View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternatives COUT-BAX-E and COUT H

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

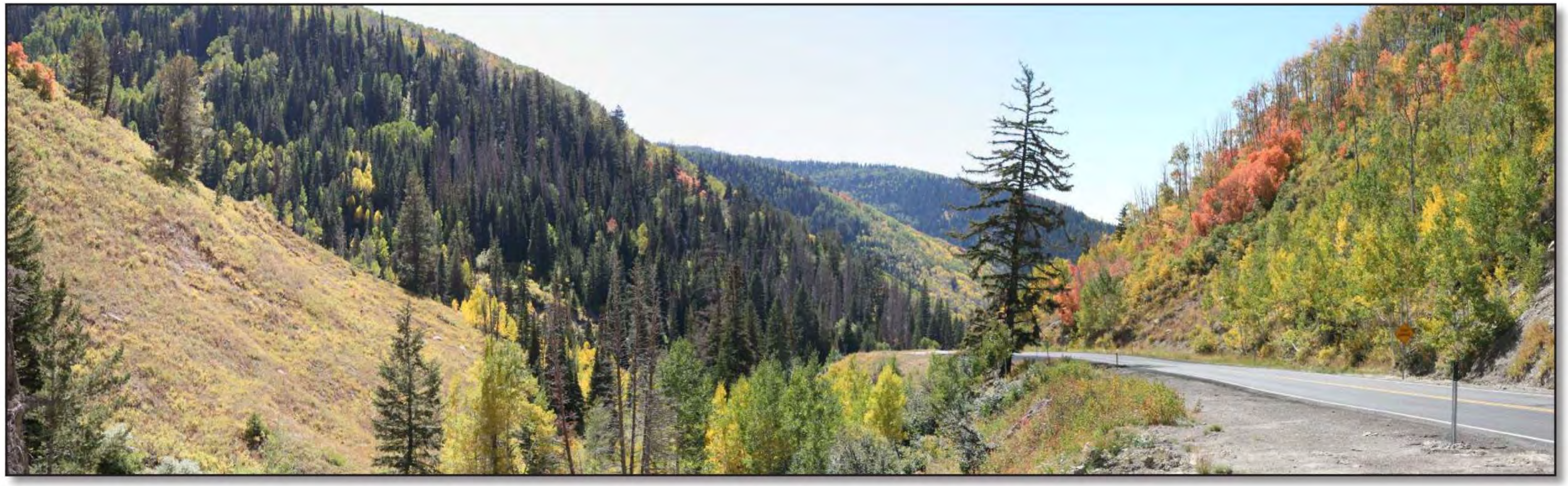
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #260 – Energy Loop Scenic Byway (Utah SR 31)

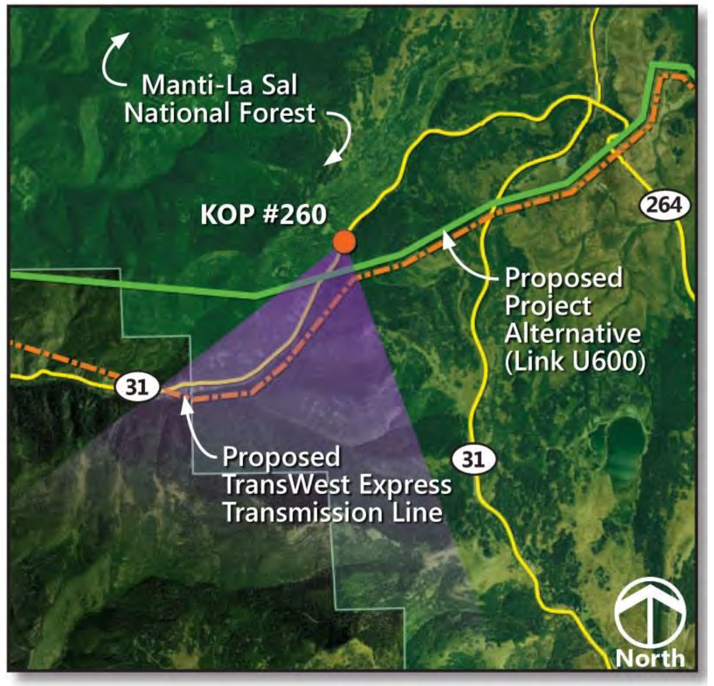
Photo Date and Time: September 27, 2011, 1:21 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 66-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

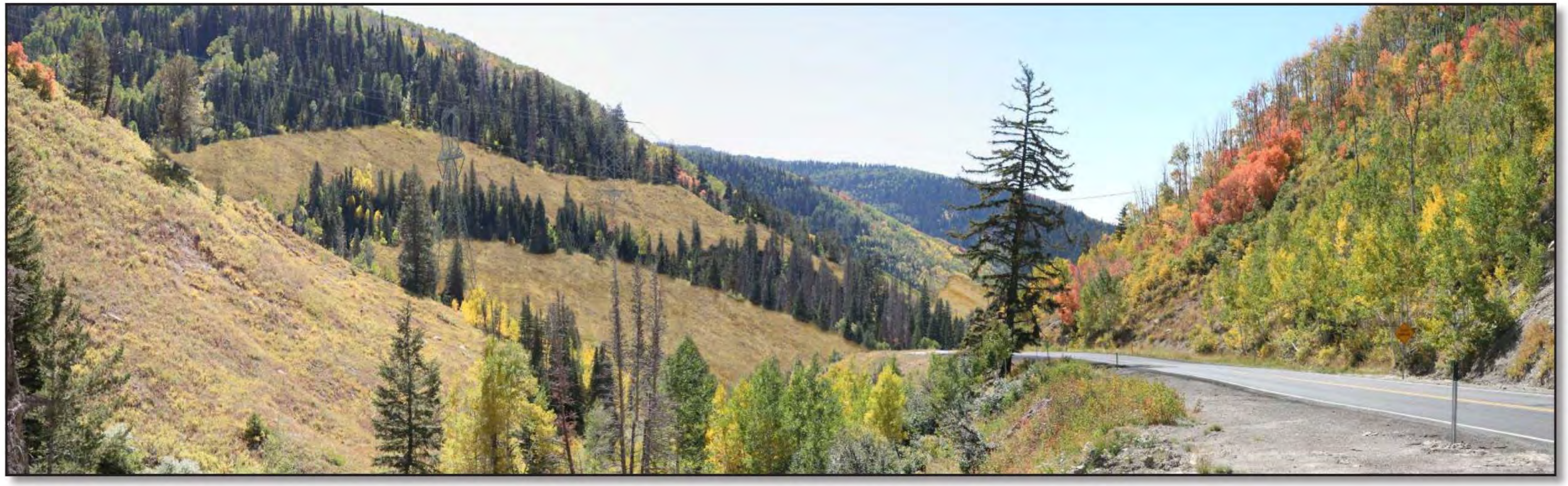
September 2015



Existing Condition – View looking south from Utah State Route 31 within the Manti-La Sal National Forest

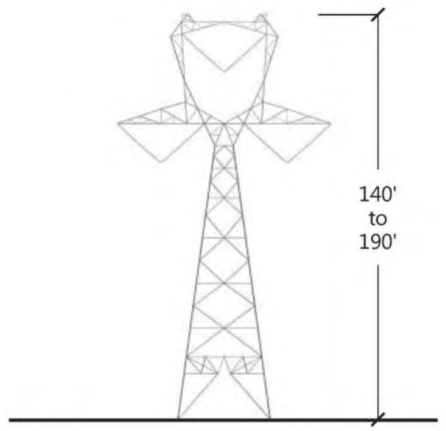

Manti-La Sal National Forest
KOP #260
264
Proposed Project Alternative (Link U600)
31
Proposed TransWest Express Transmission Line
31
North

View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternatives COUT-BAX-E and COUT H and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 27, 2011, 1:21 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 66-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

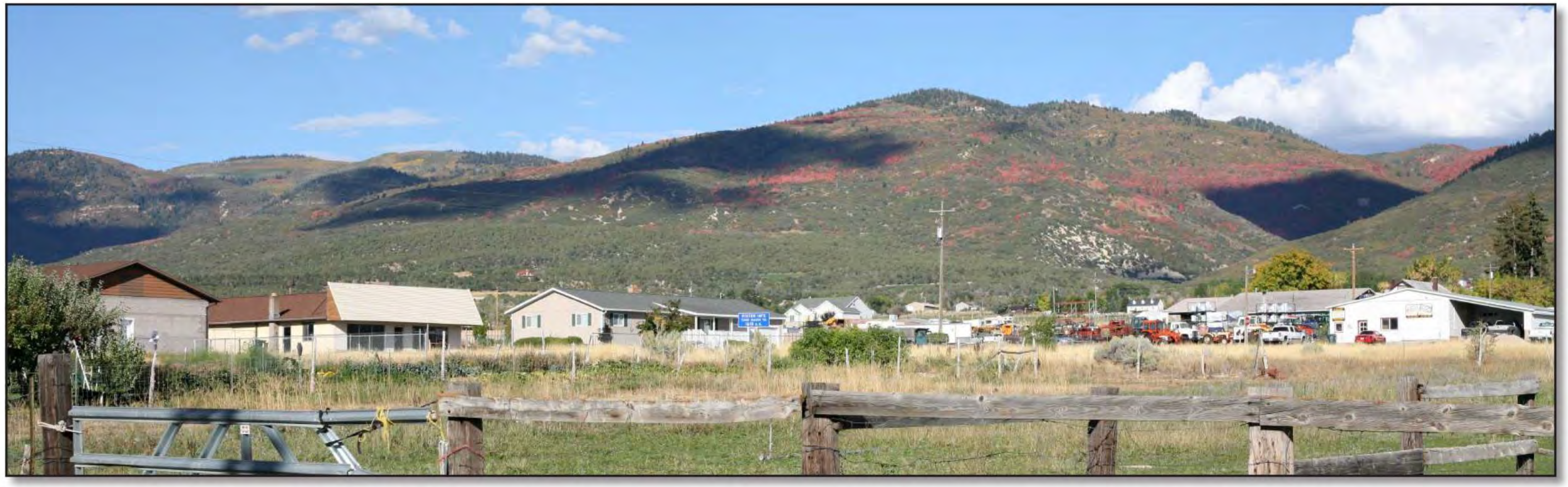
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

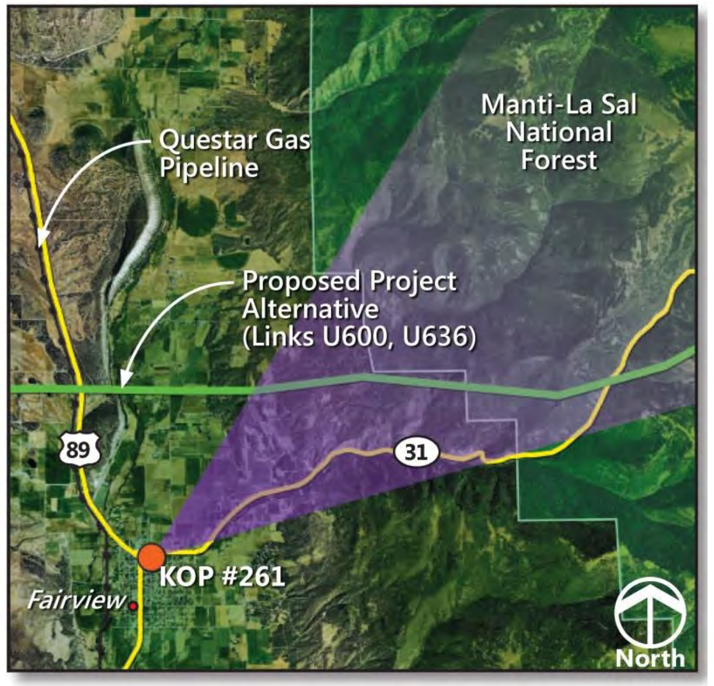
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #260 – Energy Loop Scenic Byway (Utah SR 31) Cumulative Effects

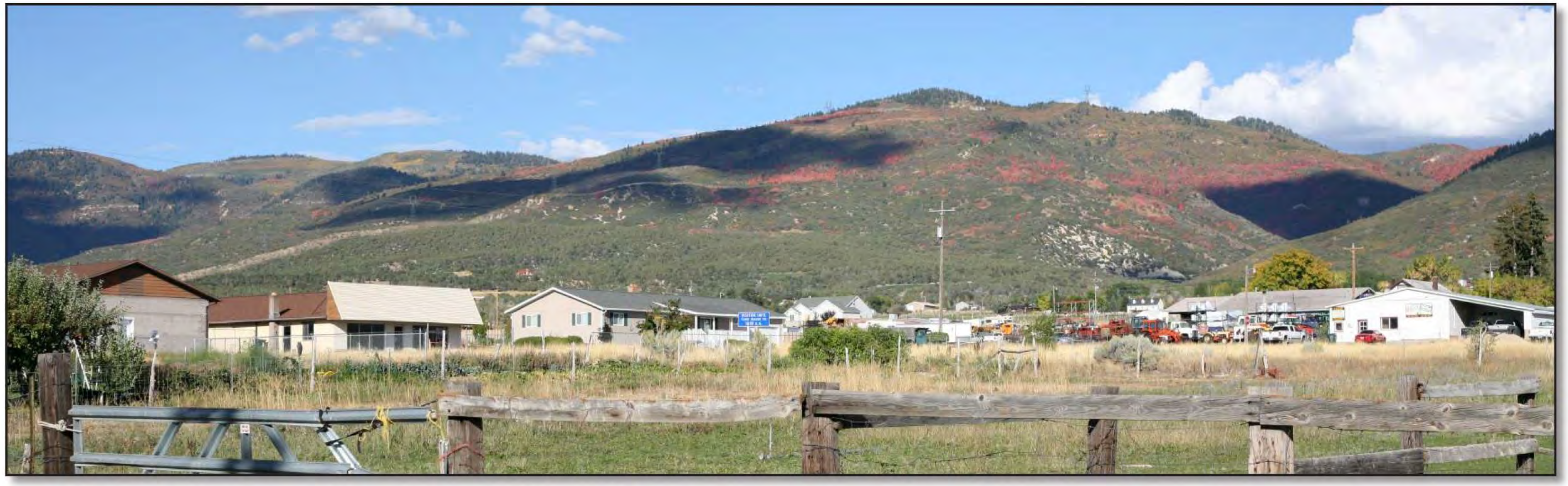
September 2015



Existing Condition – View looking northeast from the community of Fairview toward Fairview Canyon on the Manti-La Sal National Forest

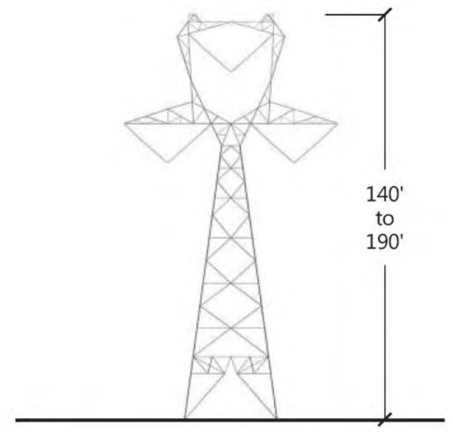

Questar Gas Pipeline
Manti-La Sal National Forest
Proposed Project Alternative (Links U600, U636)
89
31
KOP #261
Fairview
North

View Location: Approximate distance to proposed transmission line from photo location is 2.1 miles.



Simulated Condition – View of Alternatives COUT BAX-E and COUT-H

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

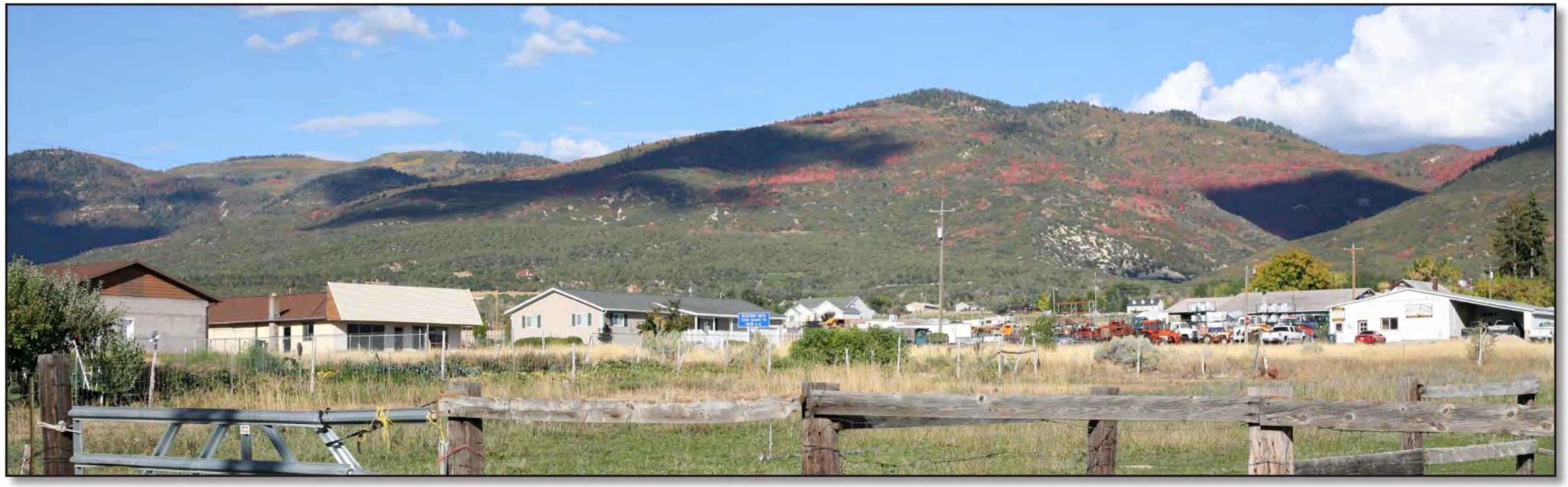
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #261 – Fairview Residential

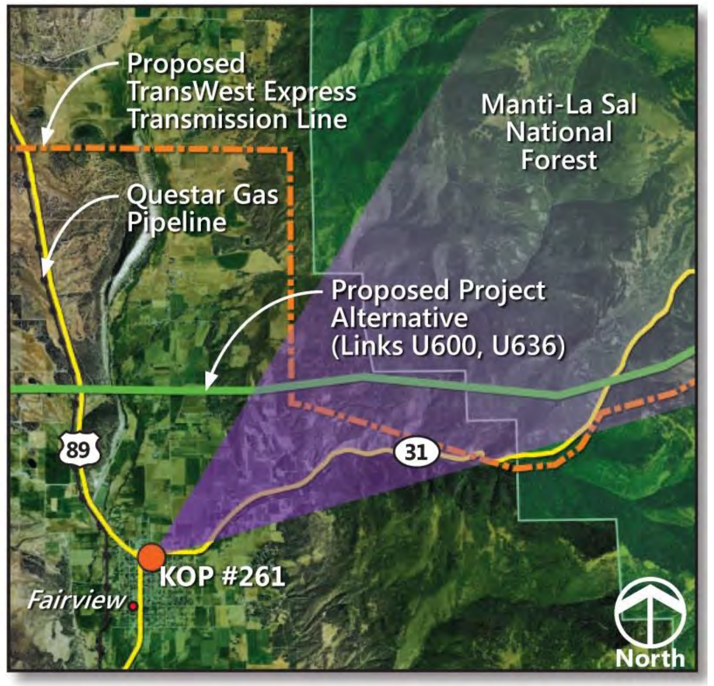
Photo Date and Time: September 26, 2011, 5:13 p.m.   Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

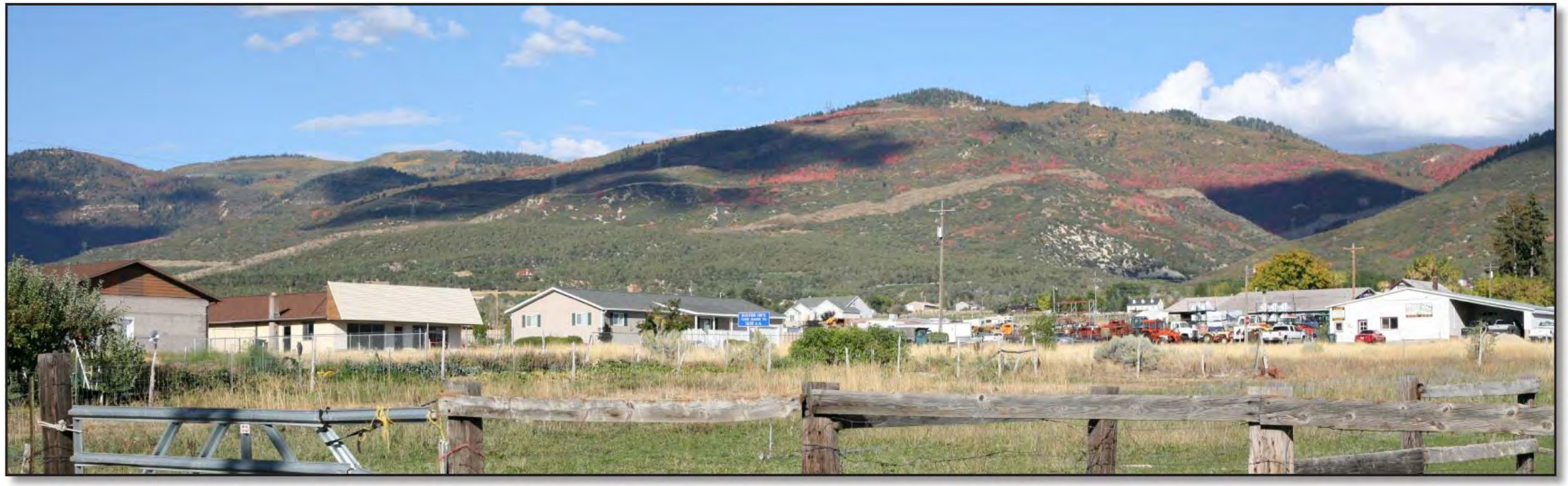
September 2015



Existing Condition – View looking northeast from the community of Fairview toward Fairview Canyon on the Manti-La Sal National Forest

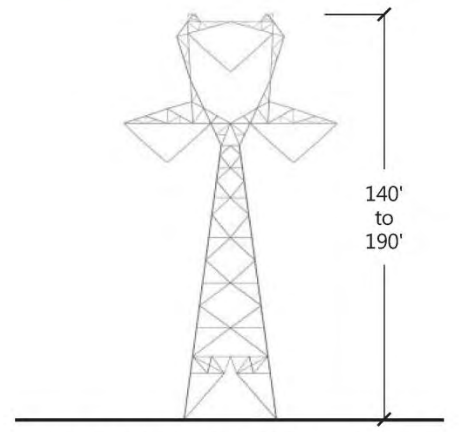

Proposed TransWest Express Transmission Line
Manti-La Sal National Forest
Questar Gas Pipeline
Proposed Project Alternative (Links U600, U636)
89
31
KOP #261
Fairview
North

View Location: Approximate distance to proposed transmission line from photo location is 2.1 miles.



Simulated Condition – View of Alternatives COUT BAX-E and COUT-H and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 26, 2011, 5:13 p.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

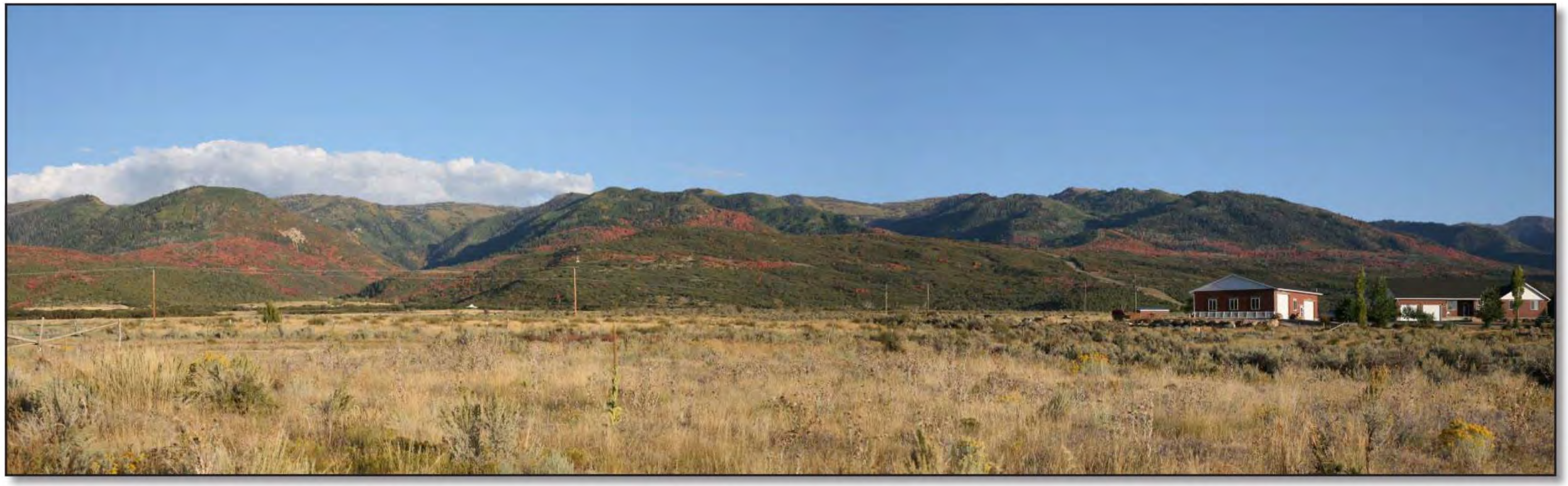
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

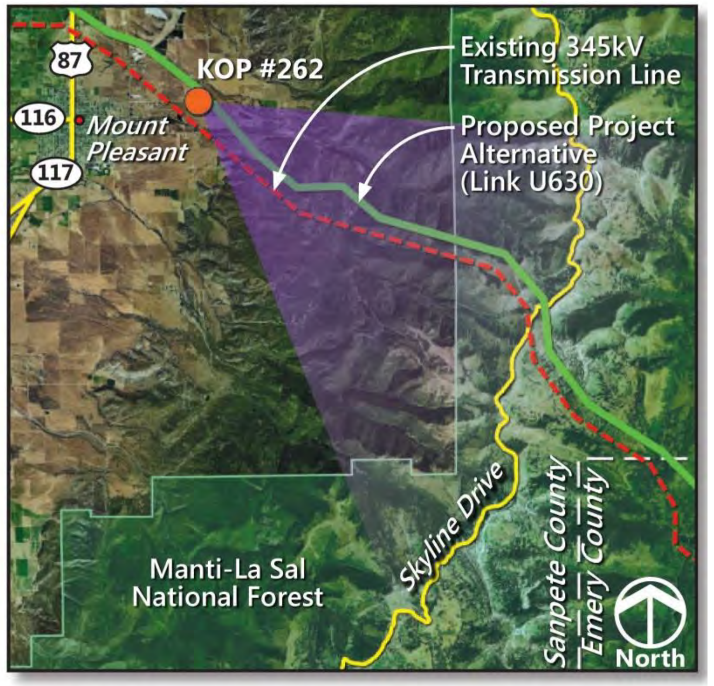
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #261 – Fairview Residential Cumulative Effects

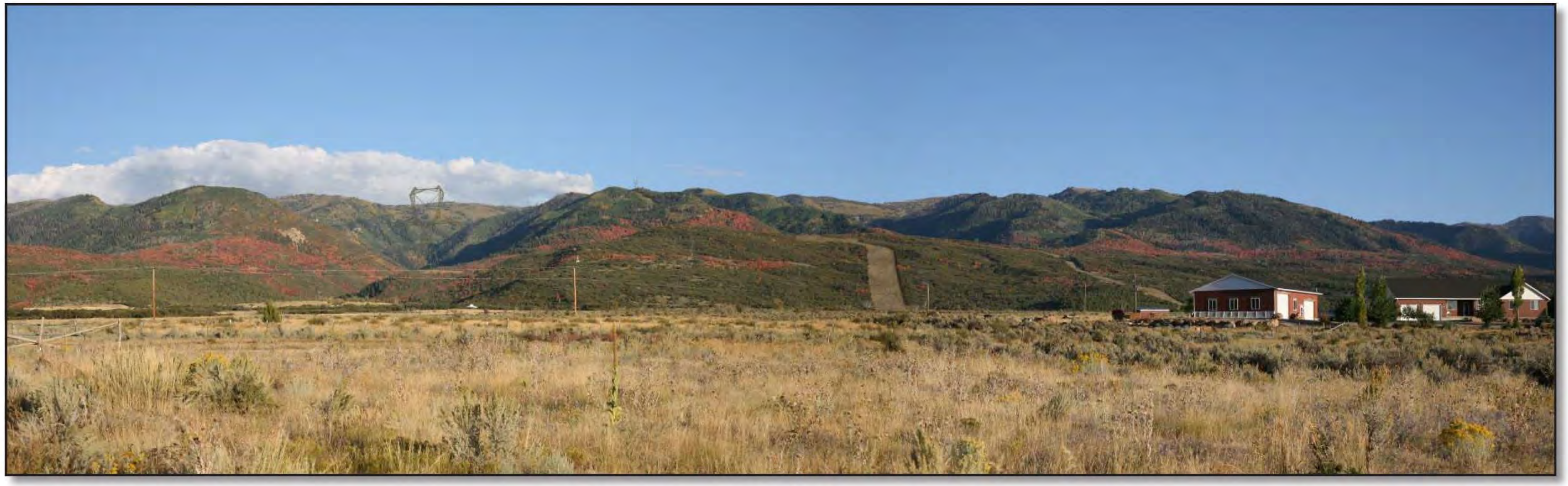
September 2015



Existing Condition – View looking southeast from dispersed residences east of Mount Pleasant, Utah, toward the Manti-La Sal National Forest and an existing 345kV transmission line

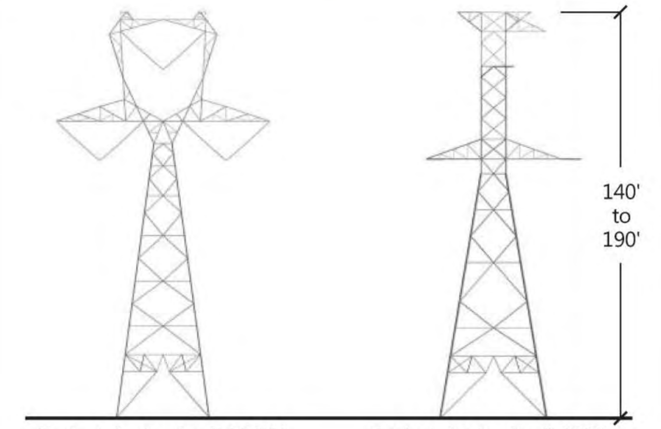

87
116
117
KOP #262
Mount Pleasant
Existing 345kV Transmission Line
Proposed Project Alternative (Link U630)
Manti-La Sal National Forest
Skyline Drive
Sanpete County
Emery County
North

View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

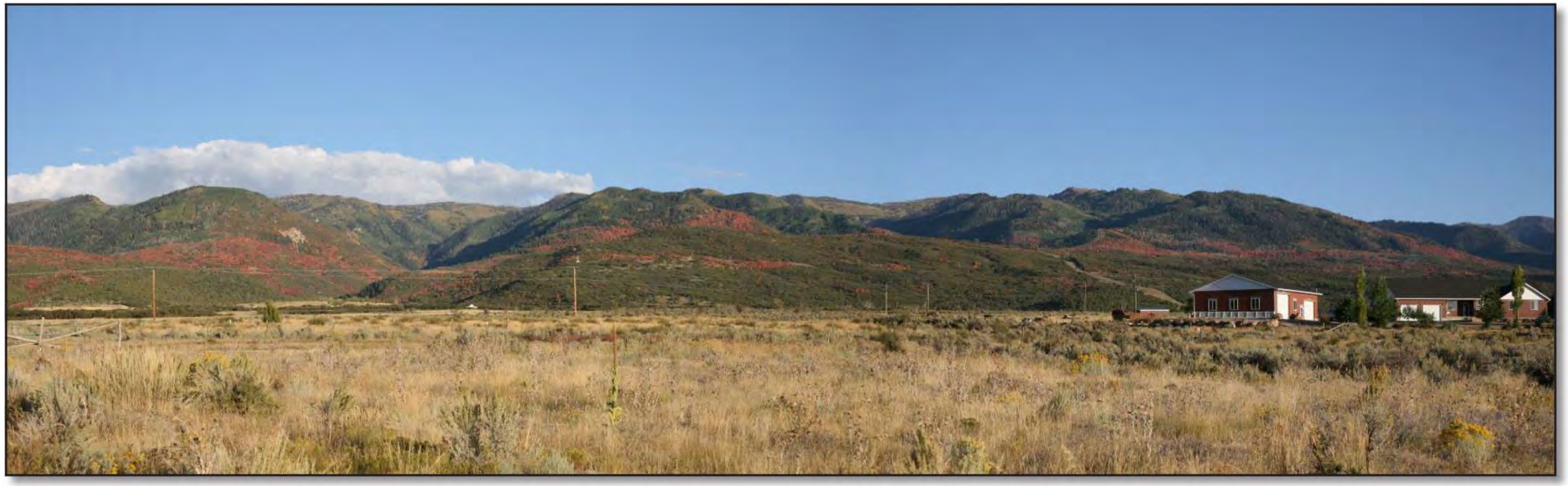
Photo Date and Time: September 26, 2011, 5:39 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a ##-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

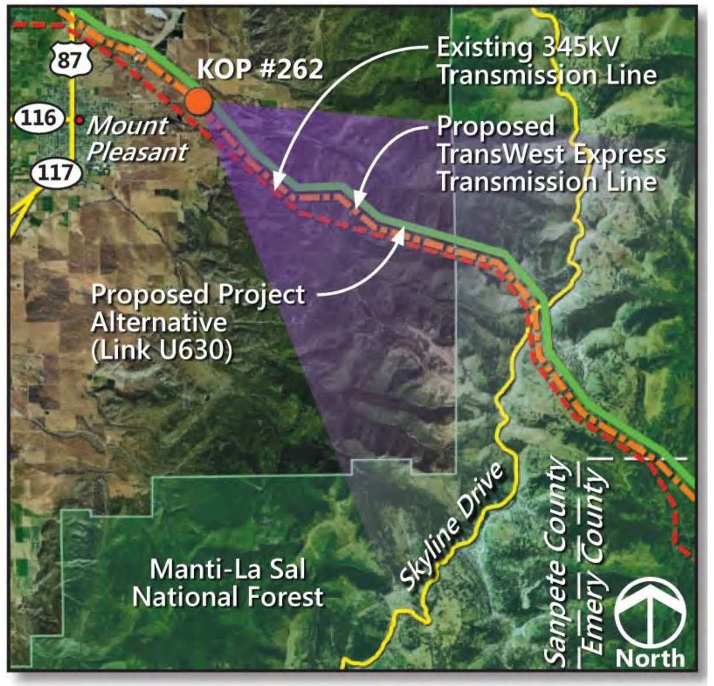
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #262 – Dispersed Residences East of Mount Pleasant

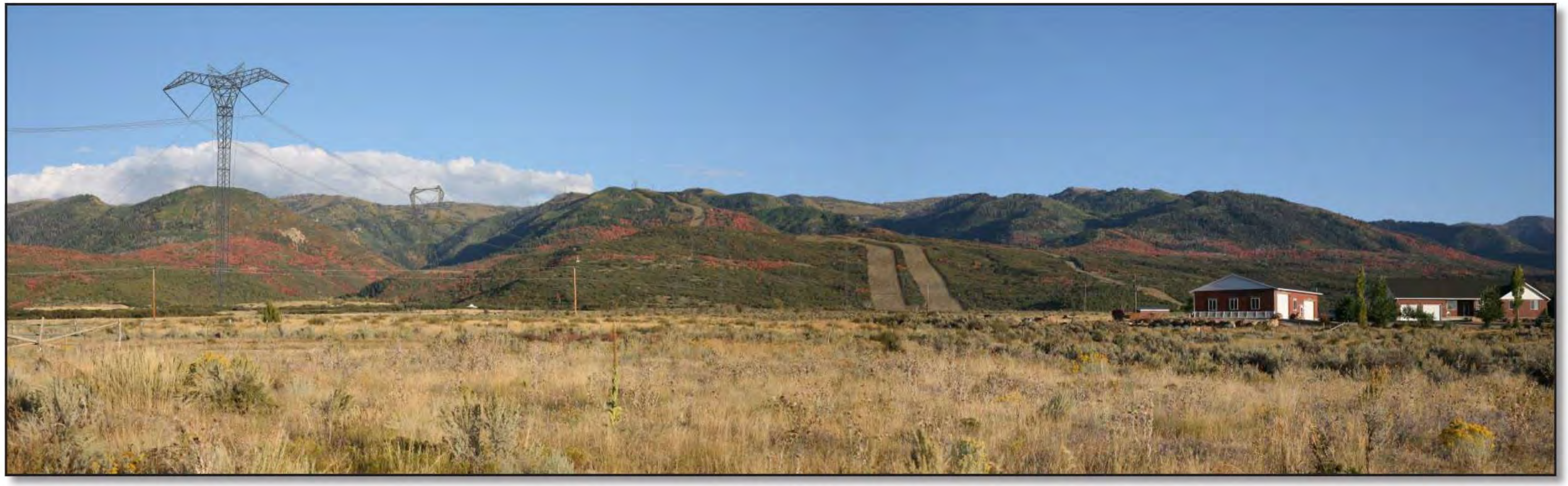
September 2015



Existing Condition – View looking southeast from dispersed residences east of Mount Pleasant, Utah, toward the Manti-La Sal National Forest and an existing 345kV transmission line

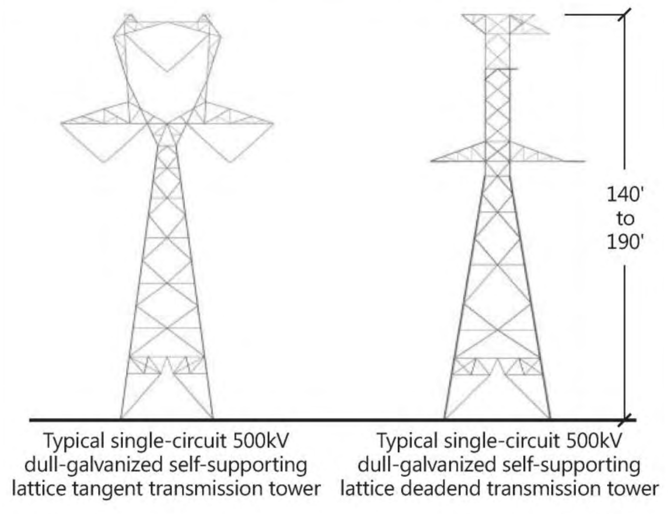

87
116
117
KOP #262
Mount Pleasant
Existing 345kV Transmission Line
Proposed TransWest Express Transmission Line
Proposed Project Alternative (Link U630)
Manti-La Sal National Forest
Skyline Drive
Sanpete County
Emery County
North

View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS


140' to 190'
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 26, 2011, 5:39 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 64-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

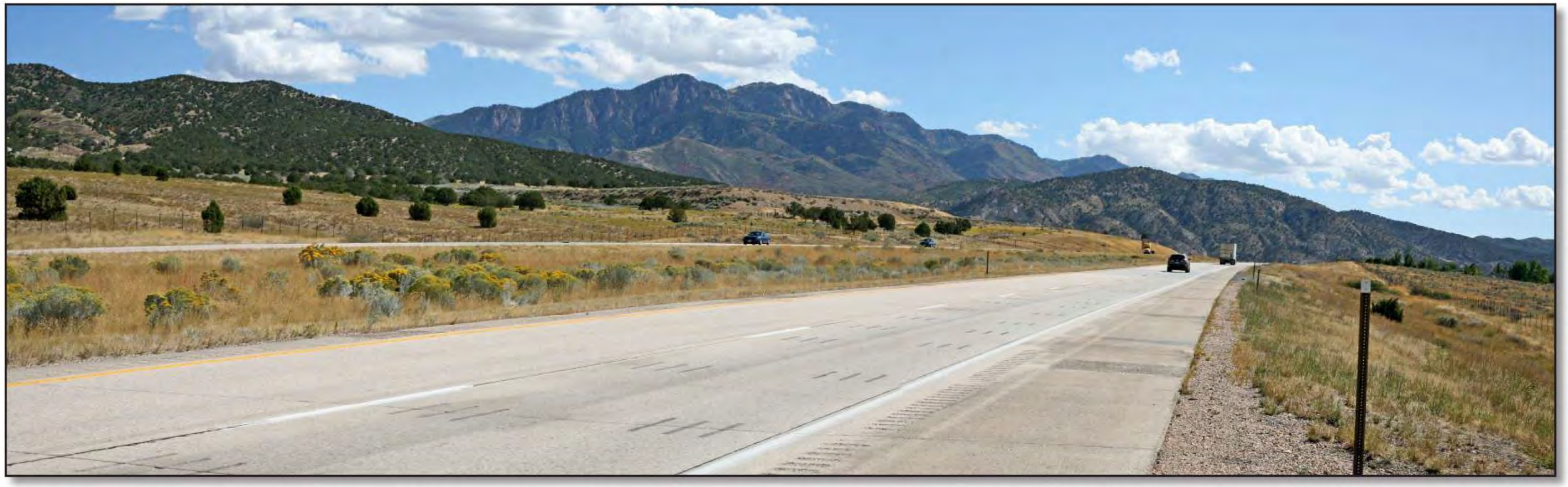
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

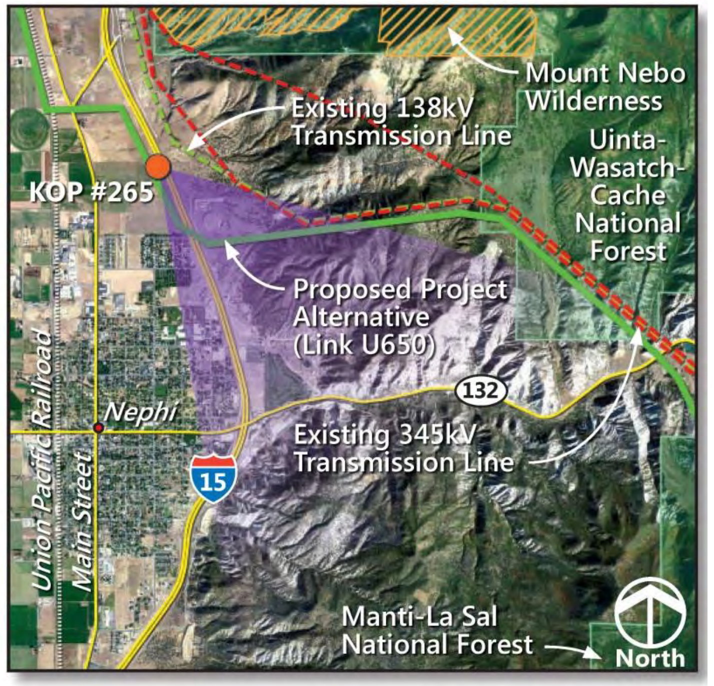
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #262 – Dispersed Residences East of Mount Pleasant Cumulative Effects

September 2015

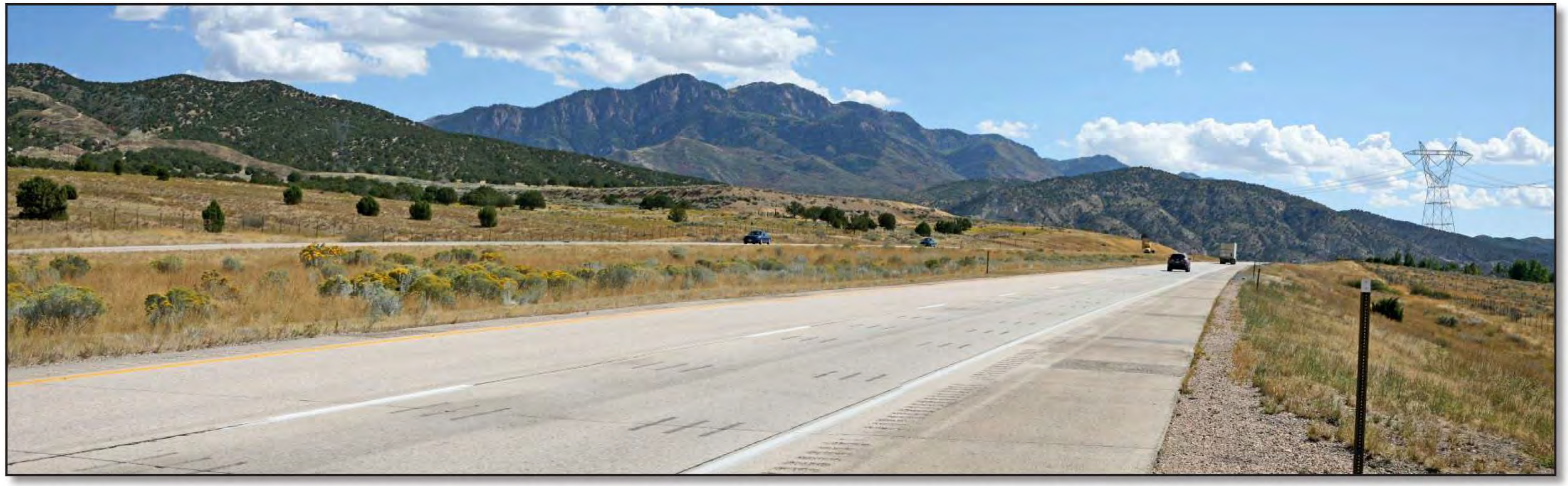


Existing Condition – View looking southeast from the shoulder of Interstate 15 toward Salt Creek Peak and the Manti-La Sal National Forest



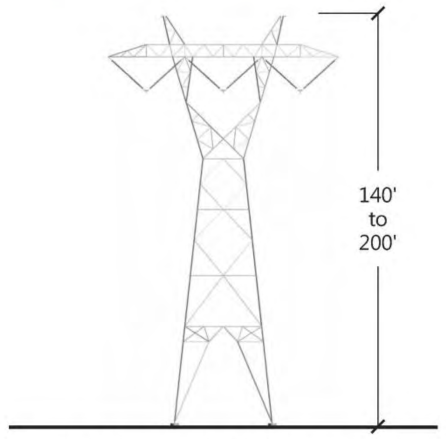
Mount Nebo Wilderness
Existing 138kV Transmission Line
Uinta-Wasatch-Cache National Forest
KOP #265
Proposed Project Alternative (Link U650)
132
Nephi
Existing 345kV Transmission Line
15
Union Pacific Railroad
Main Street
Manti-La Sal National Forest
North

View Location: Approximate distance of proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-A, COUT-B, COUT-C, COUT-H, and COUT-I

500kV TOWER STRUCTURE DIAGRAM



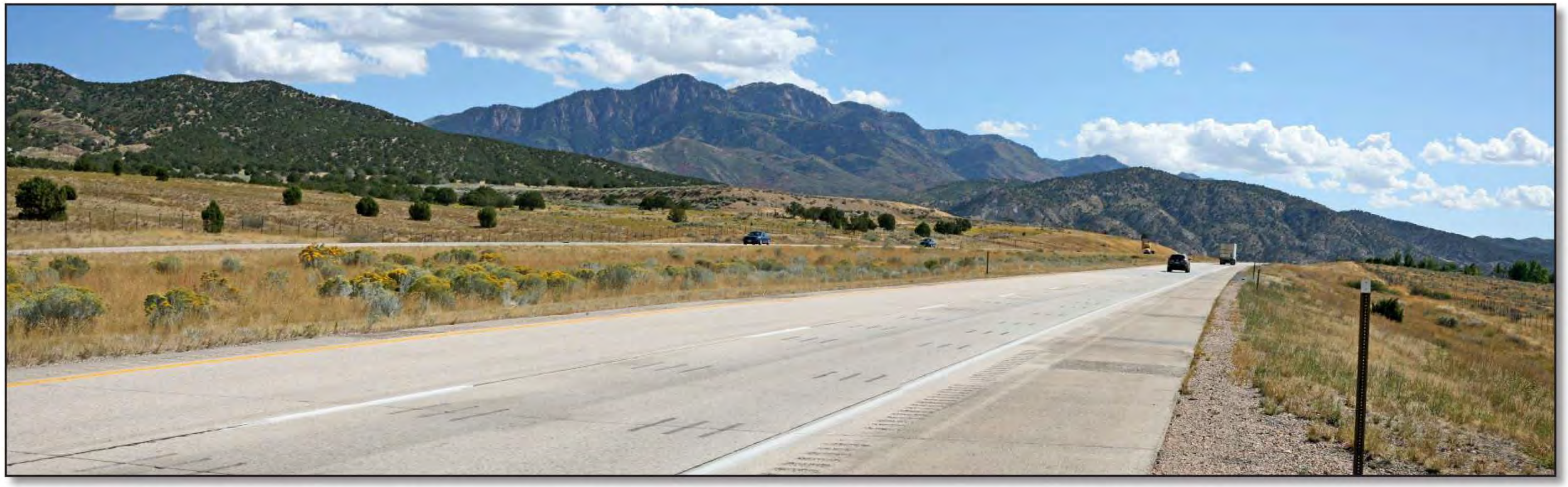
Typical single-circuit 500kV dull-galvanized
self-supporting lattice tangent transmission tower

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

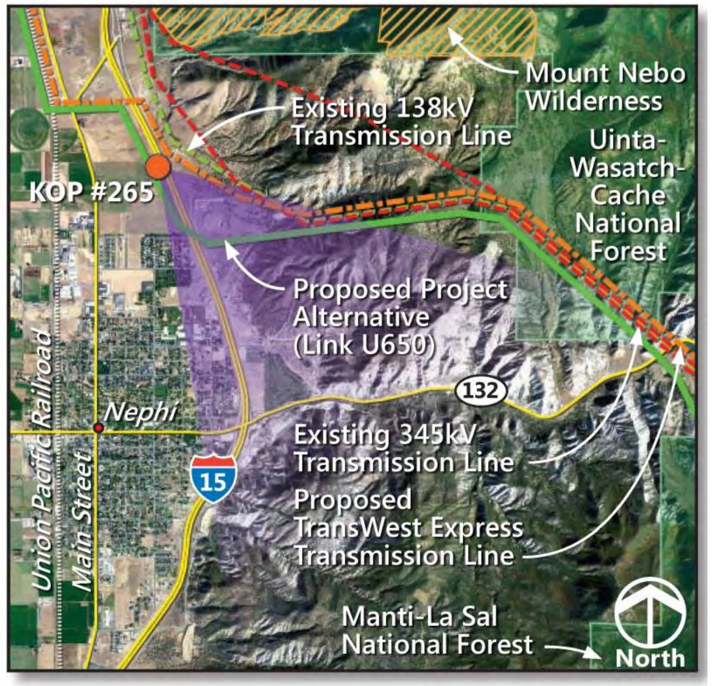
KOP #265 – Interstate 15 (Nephi)

Photo Date and Time: September 26, 2011, 2:18 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 61-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

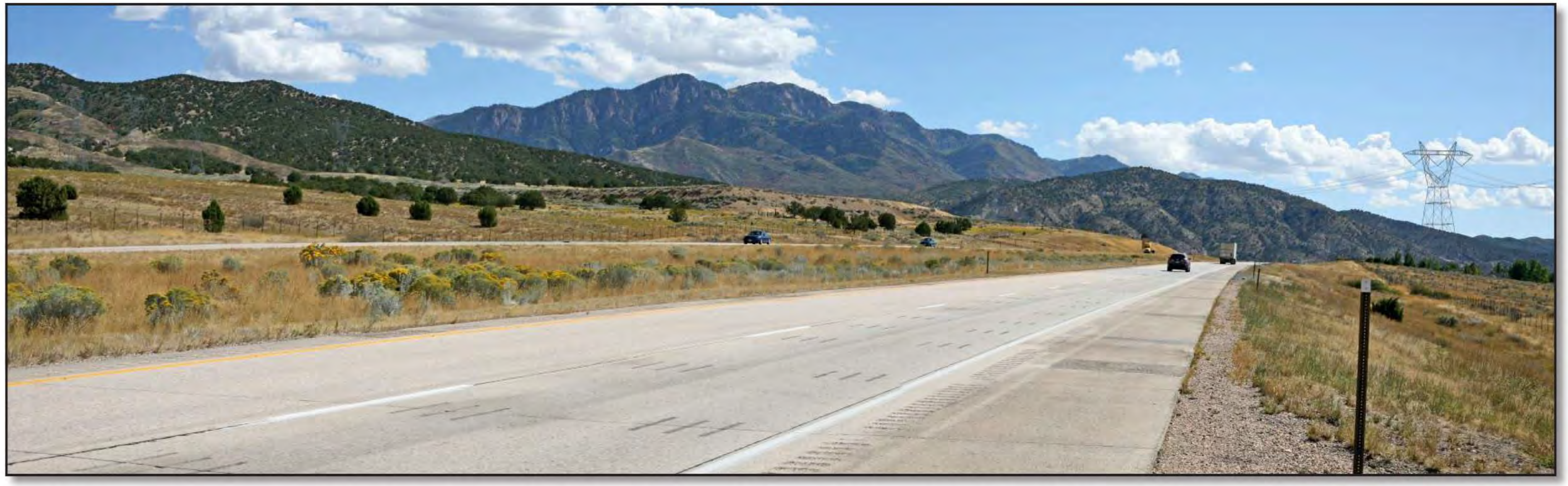
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking southeast from the shoulder of Interstate 15 toward Salt Creek Peak and the Manti-La Sal National Forest

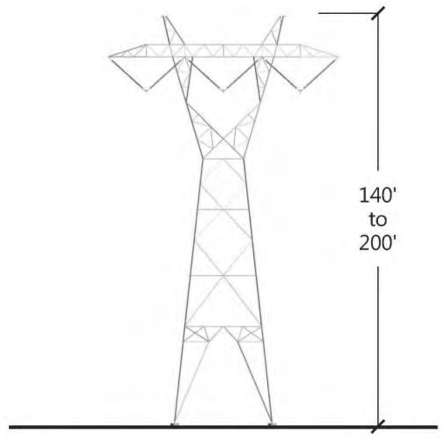

Mount Nebo Wilderness
Existing 138kV Transmission Line
Uinta-Wasatch-Cache National Forest
KOP #265
Proposed Project Alternative (Link U650)
132
Nephi
Union Pacific Railroad
Main Street
15
Existing 345kV Transmission Line
Proposed TransWest Express Transmission Line
Manti-La Sal National Forest
North

View Location: Approximate distance of proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-A, COUT-B, COUT-C, COUT-H, and COUT-I and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: September 26, 2011, 2:18 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 61-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

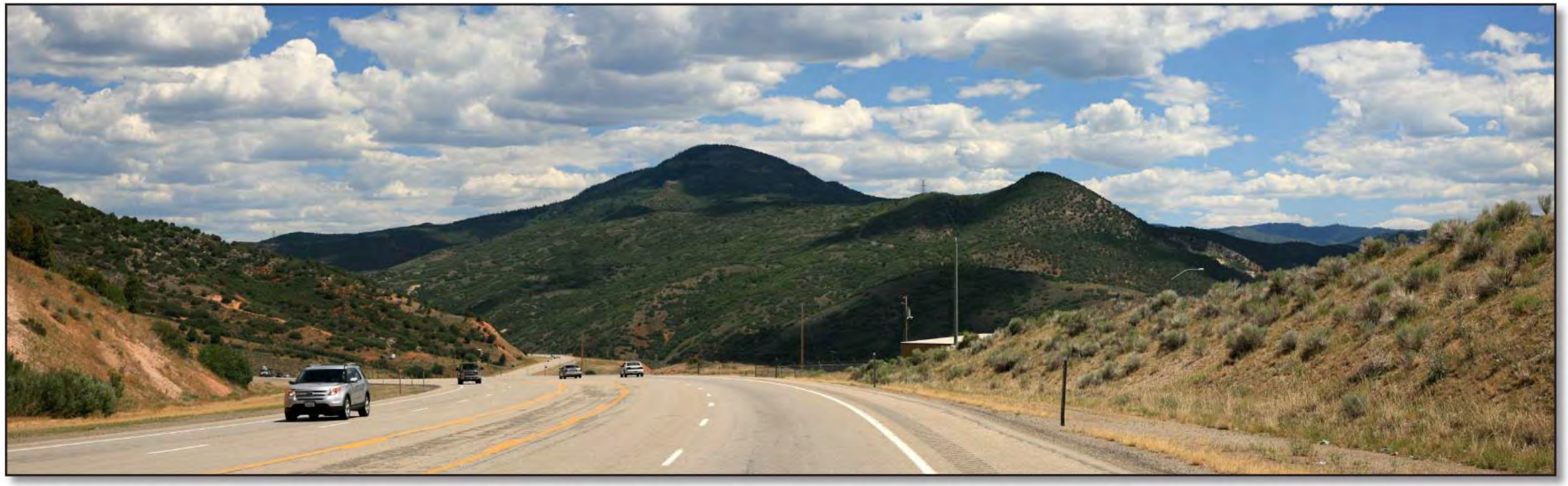
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

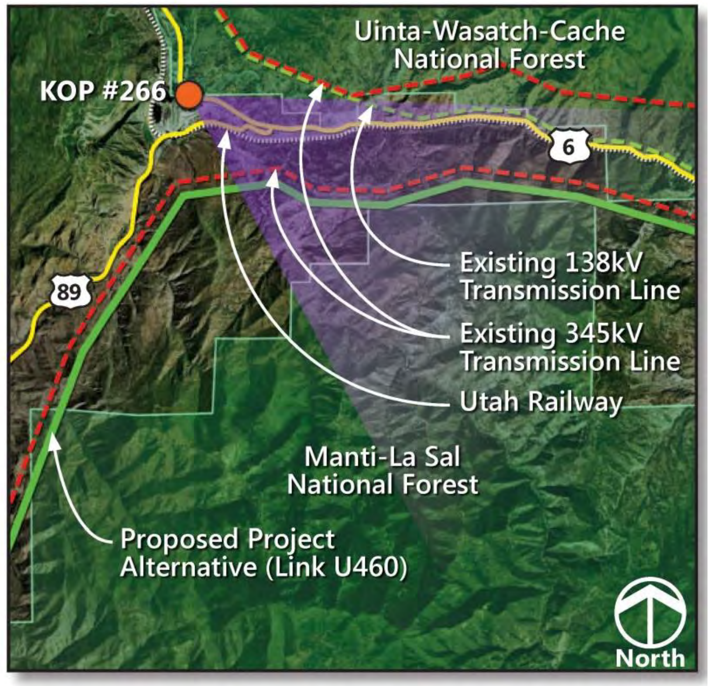
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #265 – Interstate 15 (Nephi) Cumulative Effects

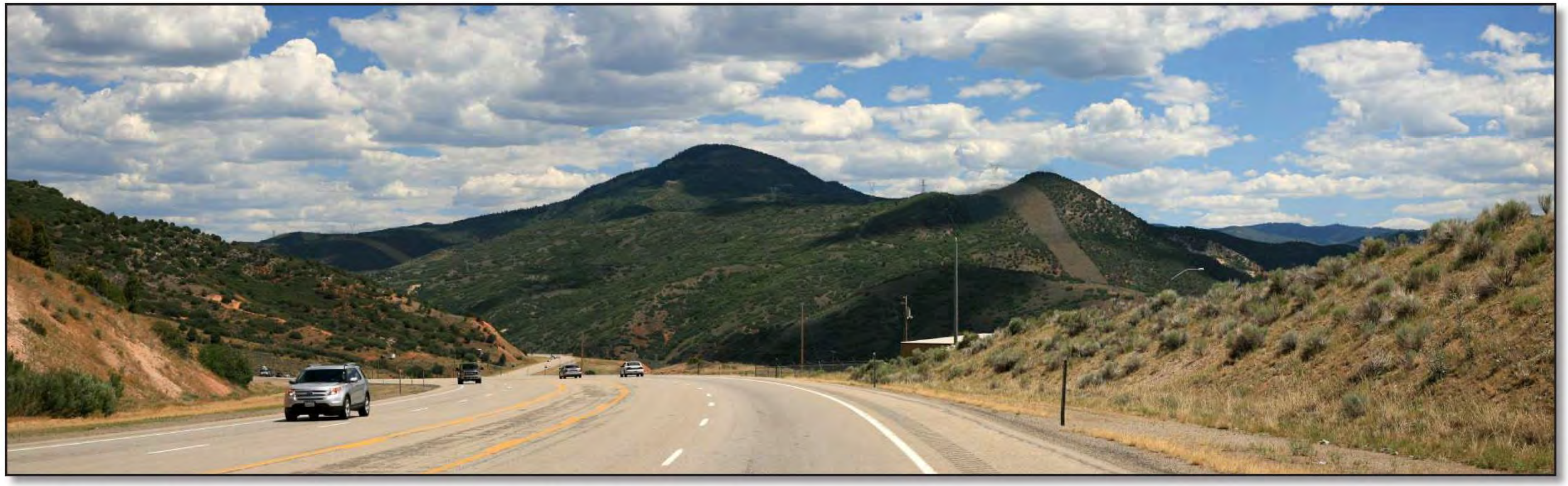
September 2015



Existing Condition – View looking east from southbound lane of U.S. Highway 6 toward Sky High Peak in the Manti-La Sal National Forest

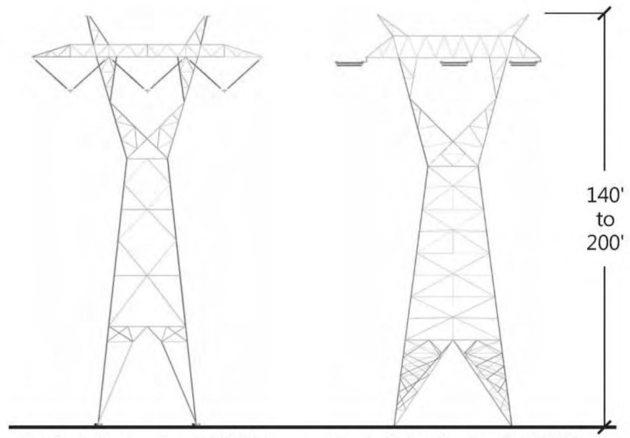

Uinta-Wasatch-Cache National Forest
KOP #266
6
89
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Utah Railway
Manti-La Sal National Forest
Proposed Project Alternative (Link U460)
North

View Location: Approximate distance of proposed transmission line from photo location is 1.5 miles.



Simulated Condition – View of Alternatives COUT-A, COUT-B, and COUT-C

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

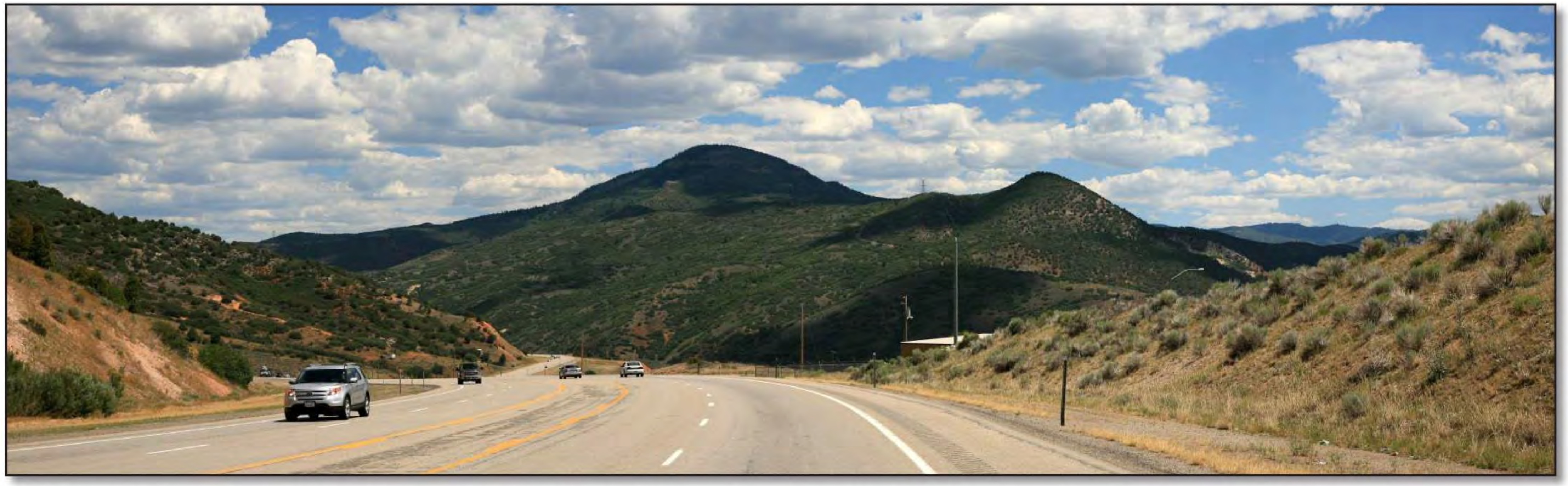
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #266 – U.S. Highway 6
(Spanish Fork Canyon)

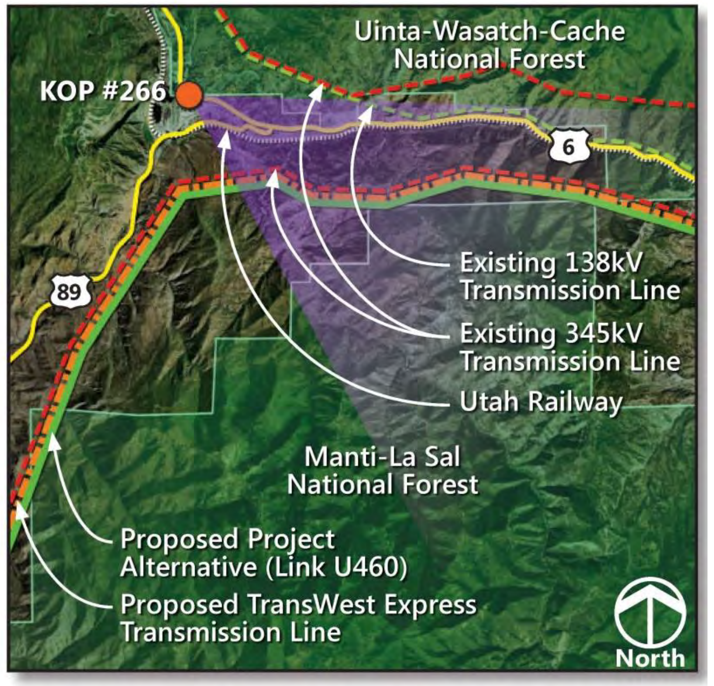
Photo Date and Time: July 26, 2011, 2:57 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 55-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

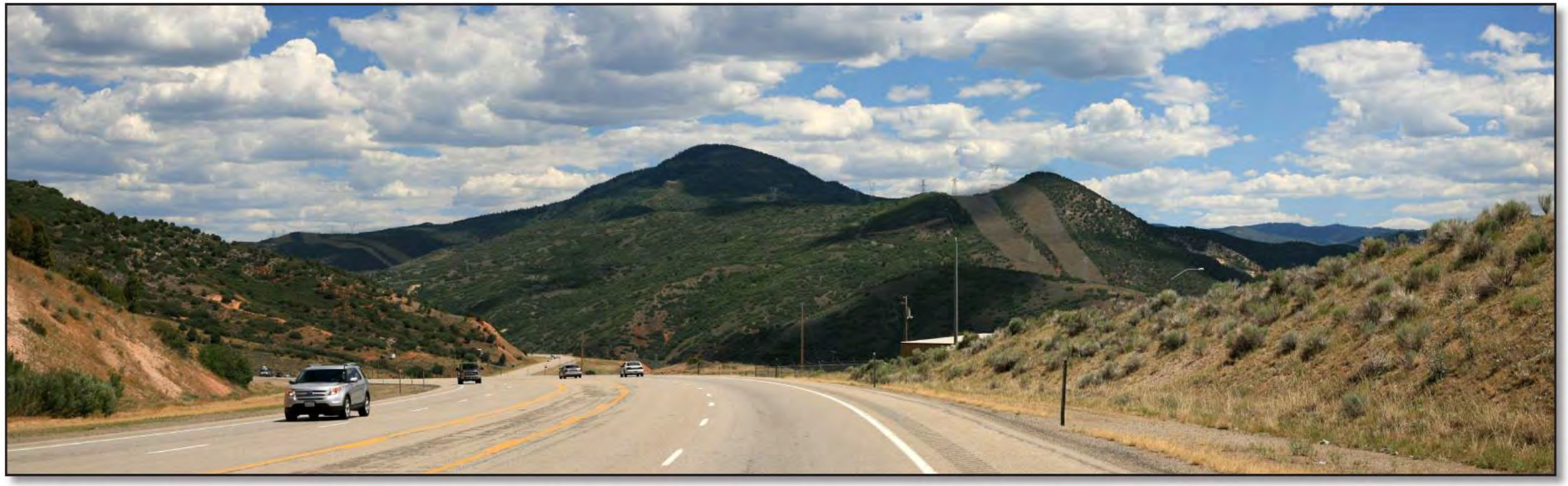
September 2015



Existing Condition – View looking east from southbound lane of U.S. Highway 6 toward Sky High Peak in the Manti-La Sal National Forest

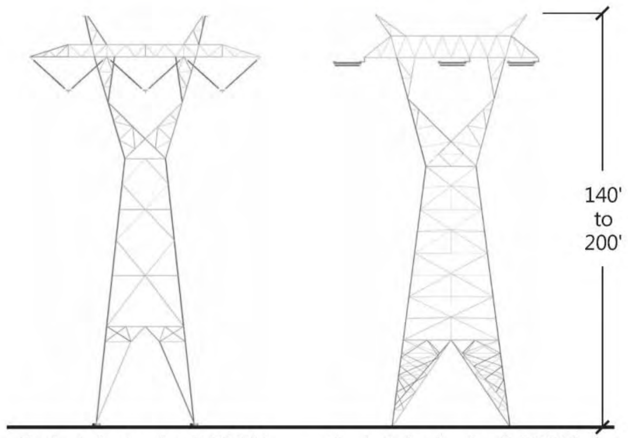

Uinta-Wasatch-Cache National Forest
KOP #266
6
89
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Utah Railway
Manti-La Sal National Forest
Proposed Project Alternative (Link U460)
Proposed TransWest Express Transmission Line
North

View Location: Approximate distance of proposed transmission line from photo location is 1.5 miles.



Simulated Condition – View of Alternatives COUT-A, COUT-B, and COUT-C and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Photo Date and Time: July 26, 2011, 2:57 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 55-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

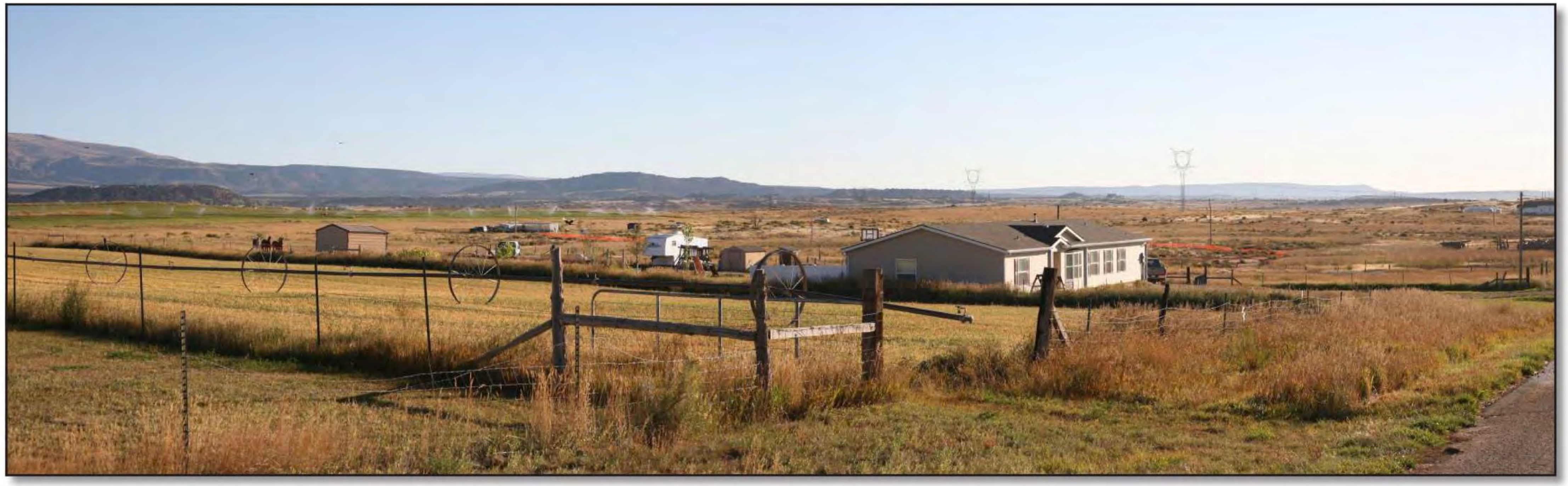
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

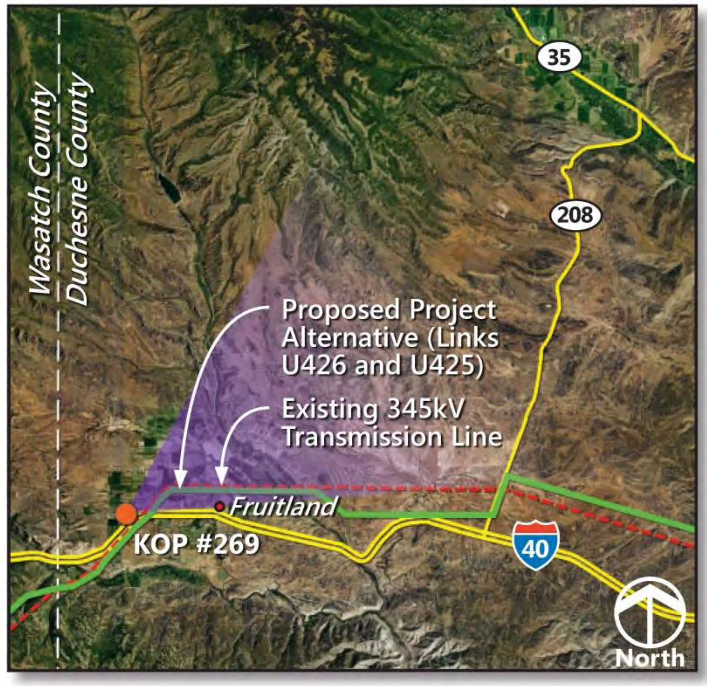
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #266 – U.S. Highway 6 (Spanish Fork Canyon) Cumulative Effects

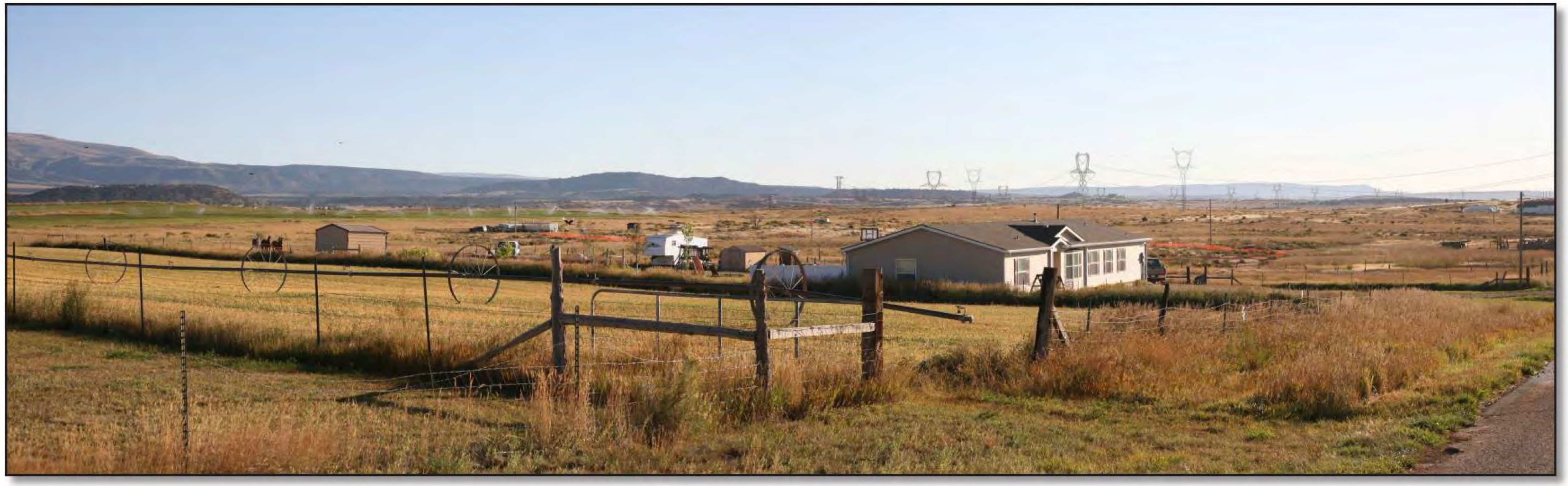
September 2015



Existing Condition – View looking northeast from residences in Fruitland, Utah, toward an existing 345kV transmission line

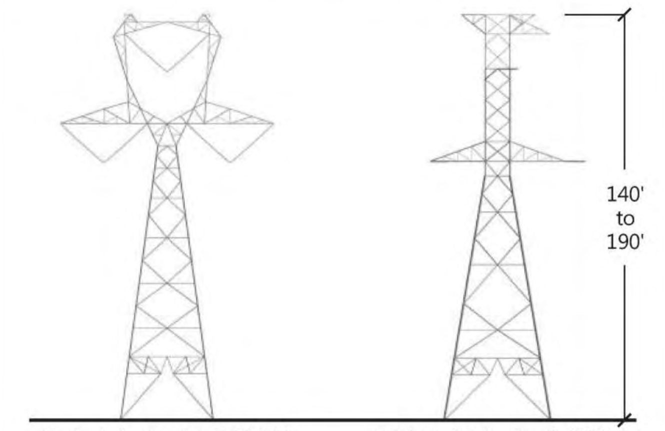

Wasatch County
Duchesne County
35
208
Proposed Project Alternative (Links U426 and U425)
Existing 345kV Transmission Line
Fruitland
KOP #269
40
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative COUT-A

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

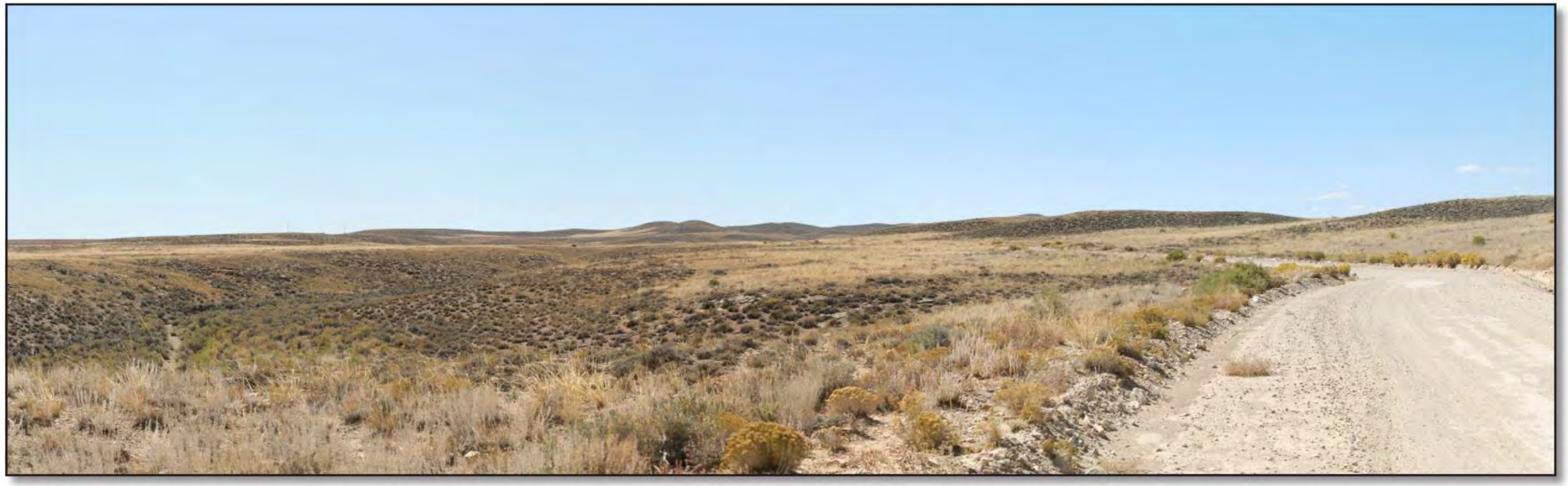
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #269 – Fruitland Residential

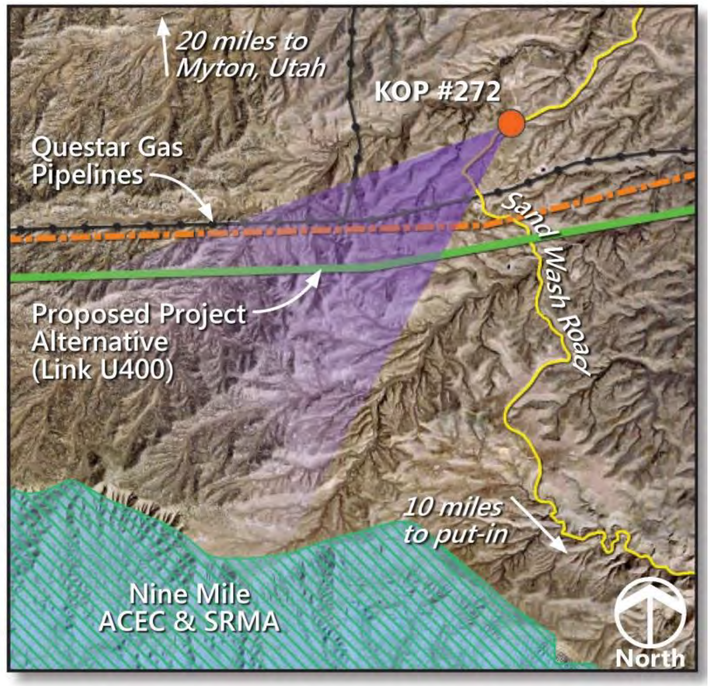
Photo Date and Time: September 30, 2011, 7:53 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 57-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

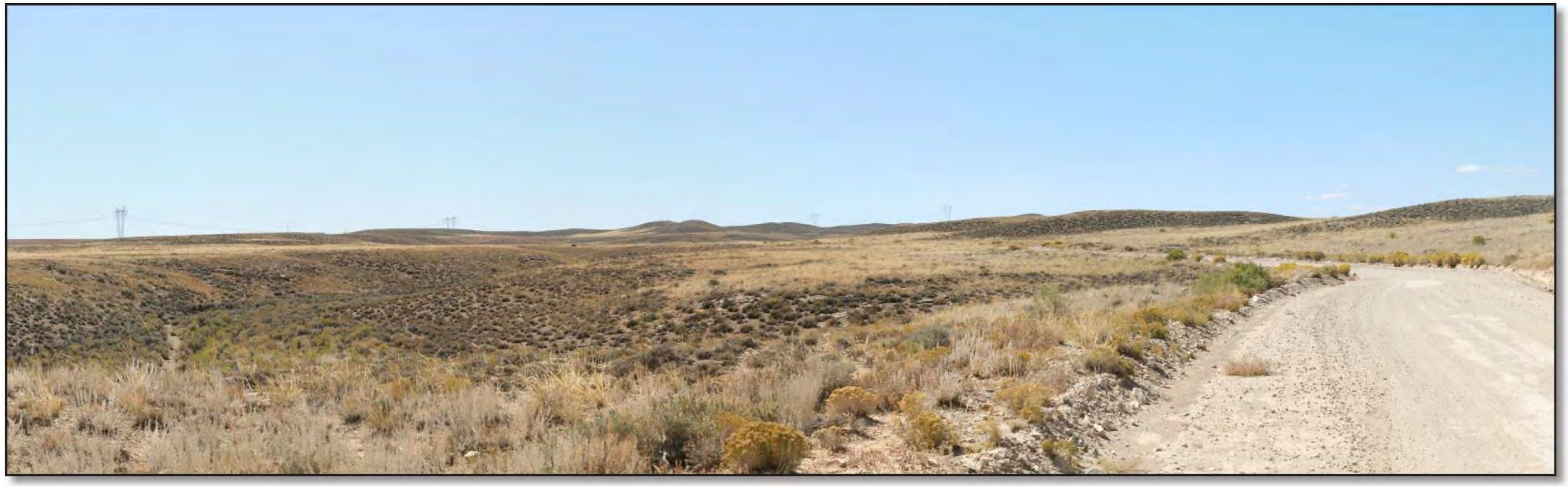
September 2015



Existing Condition – View looking southwest from Sand Wash Road, 20 miles south of Myton, Utah, toward BLM VRM Class IV lands

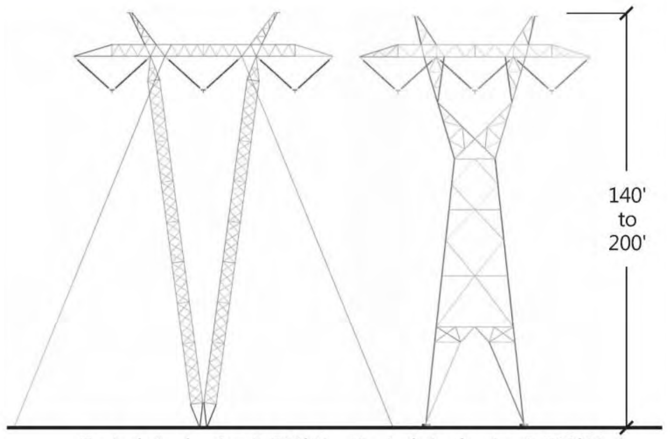


View Location: Approximate distance of proposed transmission line from photo location is 1.3 miles.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

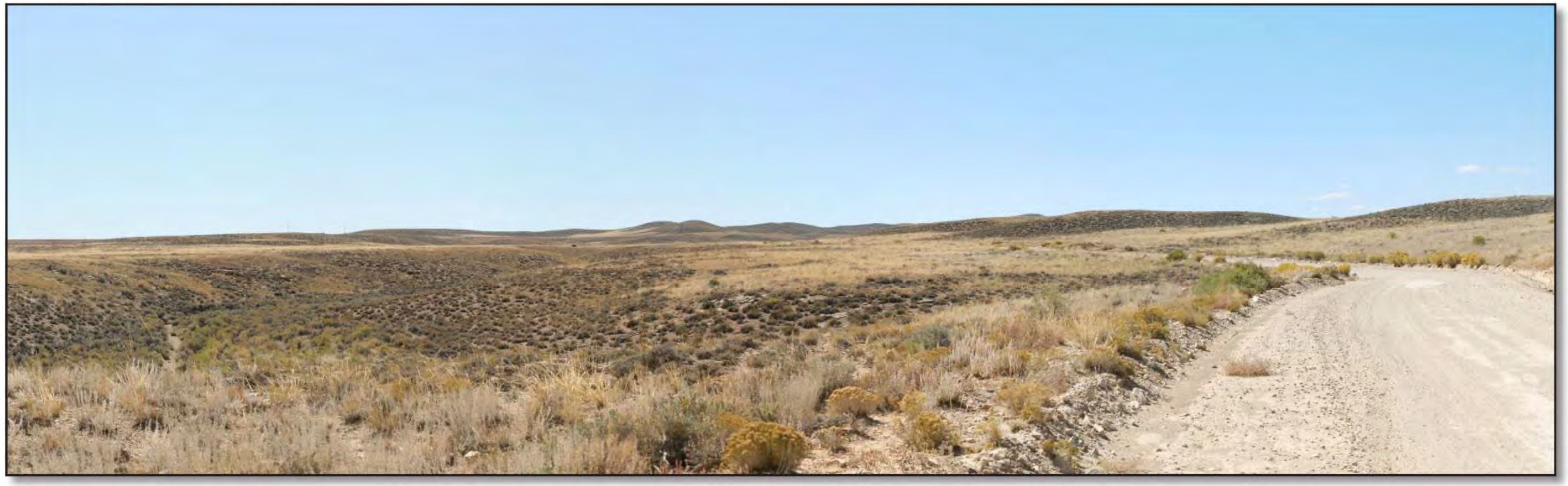
Photo Date and Time: September 28, 2011, 1:44 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 68-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

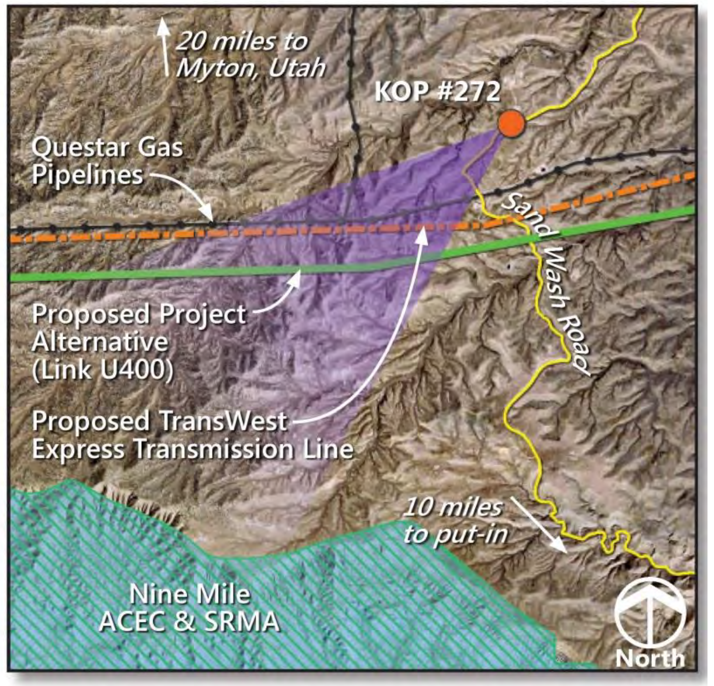
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #272 – Sand Wash North Destination Route

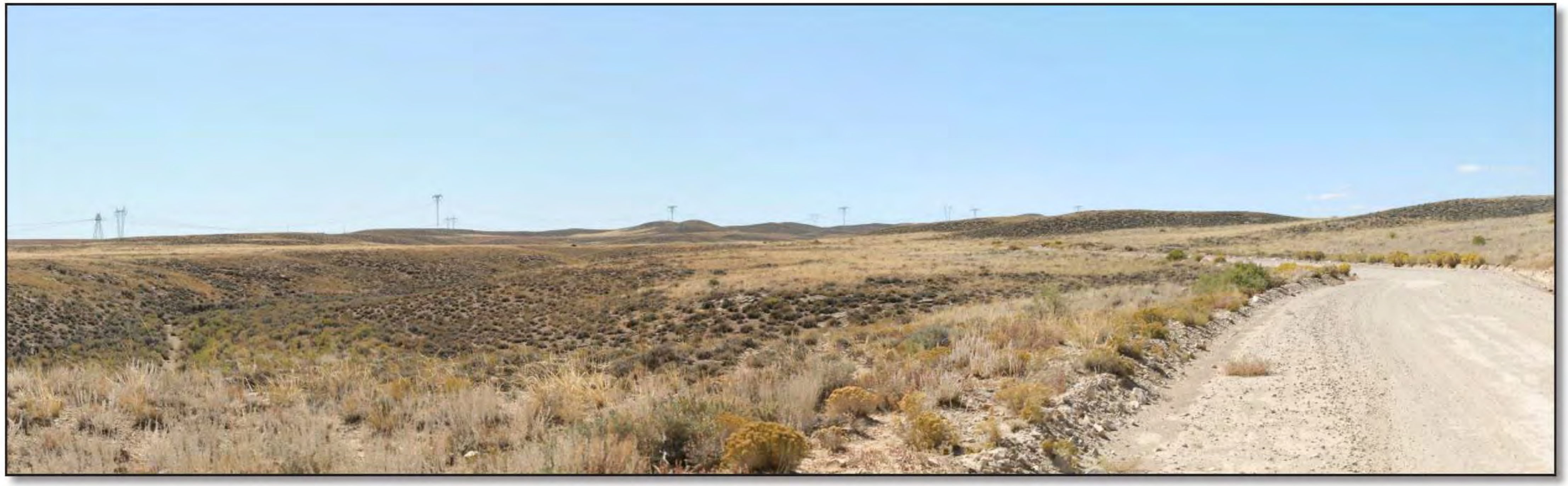
September 2015



Existing Condition – View looking southwest from Sand Wash Road, 20 miles south of Myton, Utah, toward BLM VRM Class IV lands

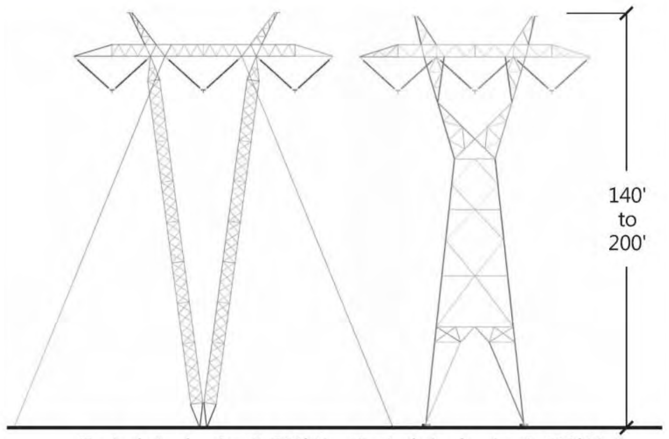


View Location: Approximate distance of proposed transmission line from photo location is 1.3 miles.



Simulated Condition – View of Alternatives COUT-C, COUT-H, and COUT-I and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

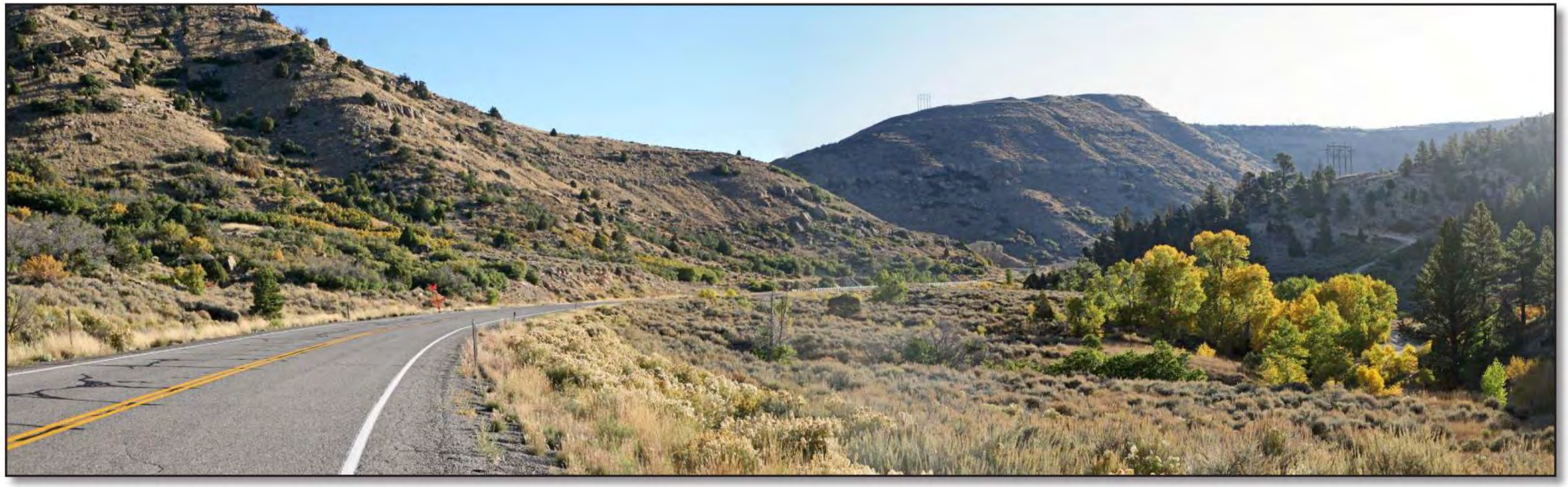
KOP #272 – Sand Wash North Destination Route Cumulative Effects

September 2015

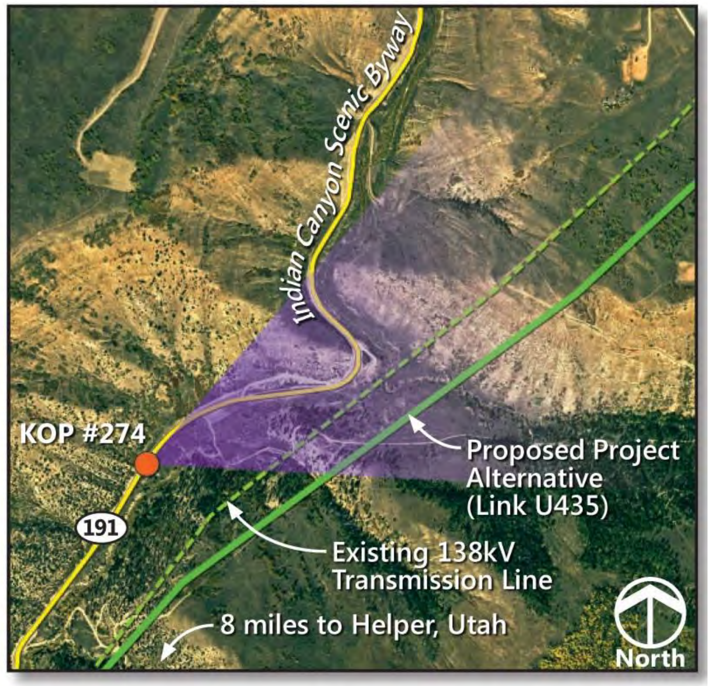
Photo Date and Time: September 28, 2011, 1:44 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 68-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

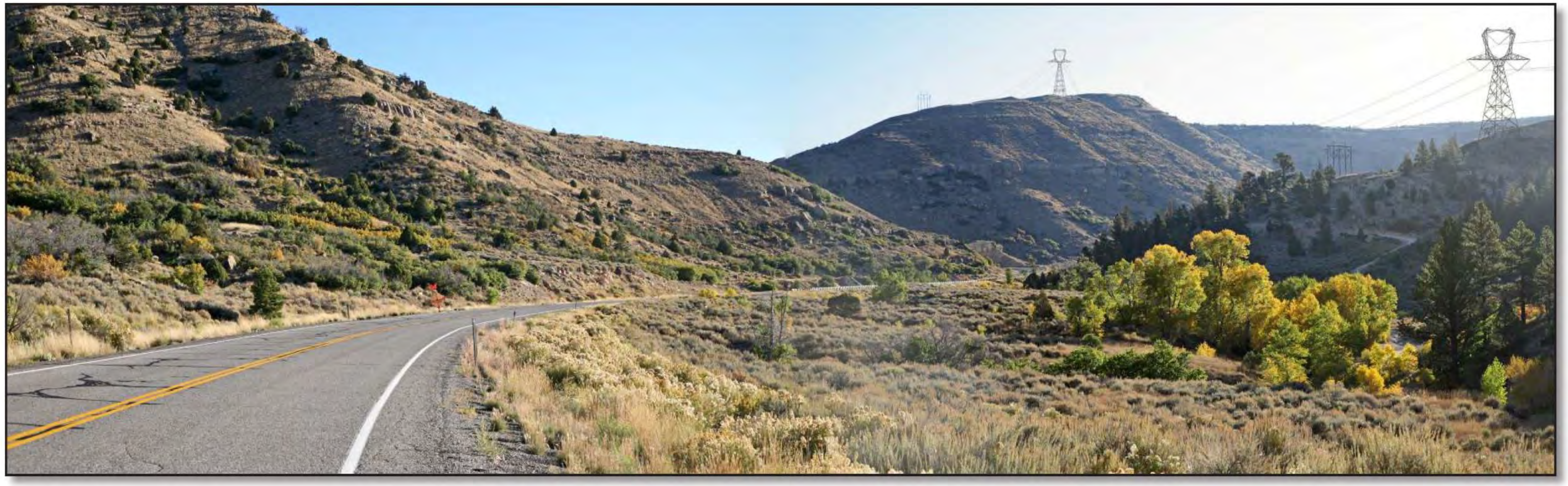
Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.



Existing Condition – View looking northeast from U.S. Highway 191

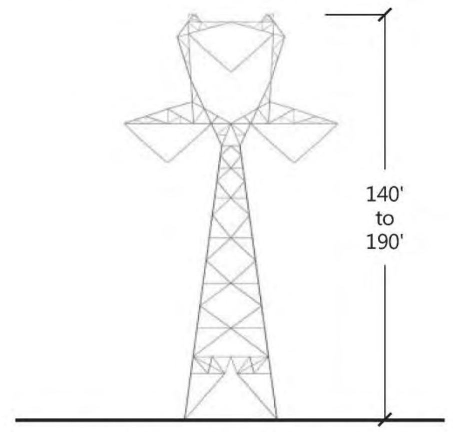

Indian Canyon Scenic Byway
KOP #274
191
Proposed Project Alternative (Link U435)
Existing 138kV Transmission Line
8 miles to Helper, Utah
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternative COUT-H

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

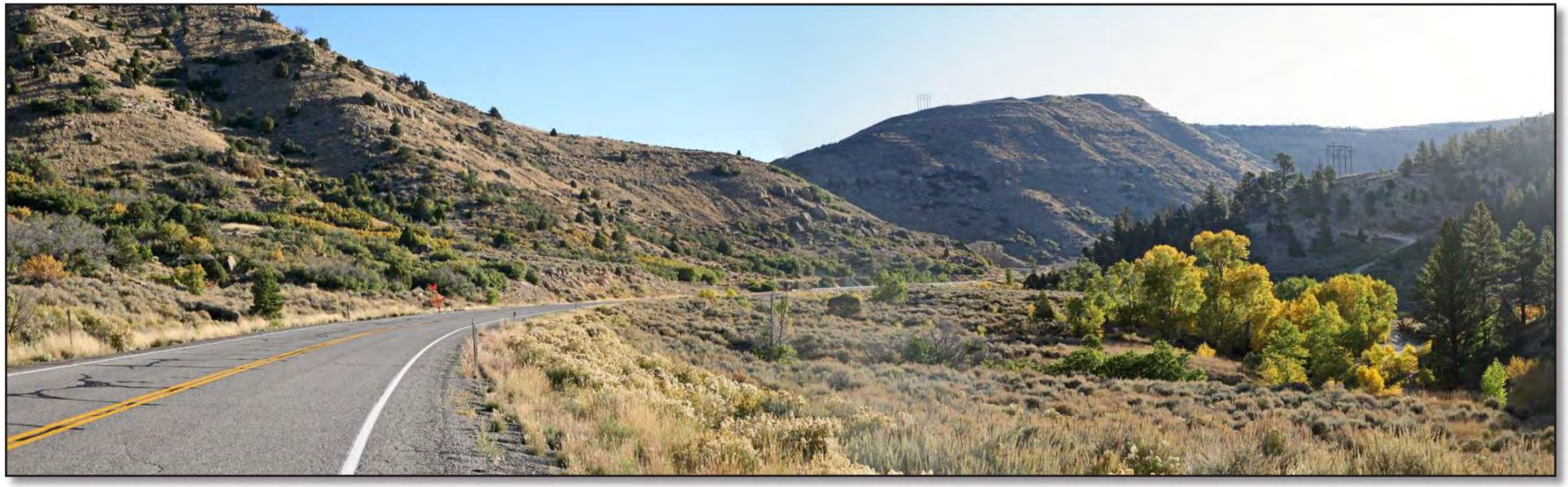
Photo Date and Time: September 28, 2011, 8:44 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 51-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

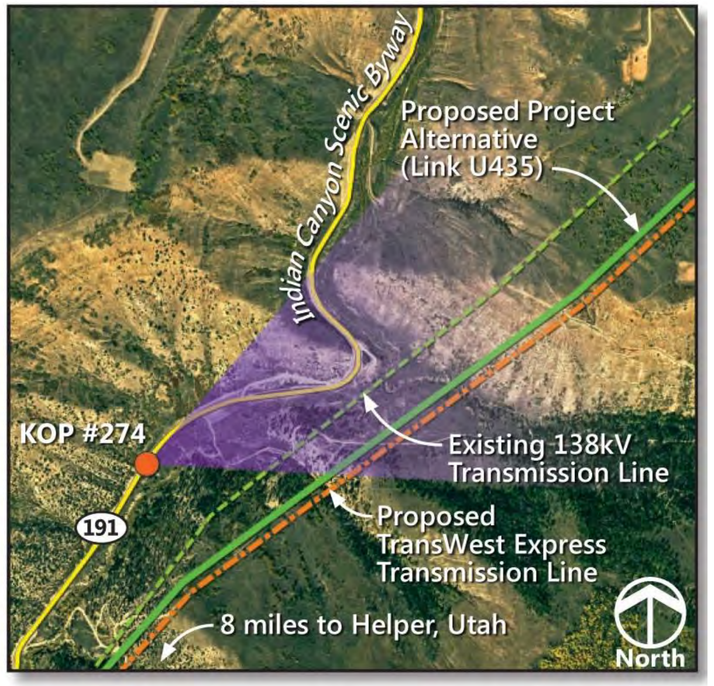
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #274 – Indian Canyon Scenic Byway (U.S. Highway 191)

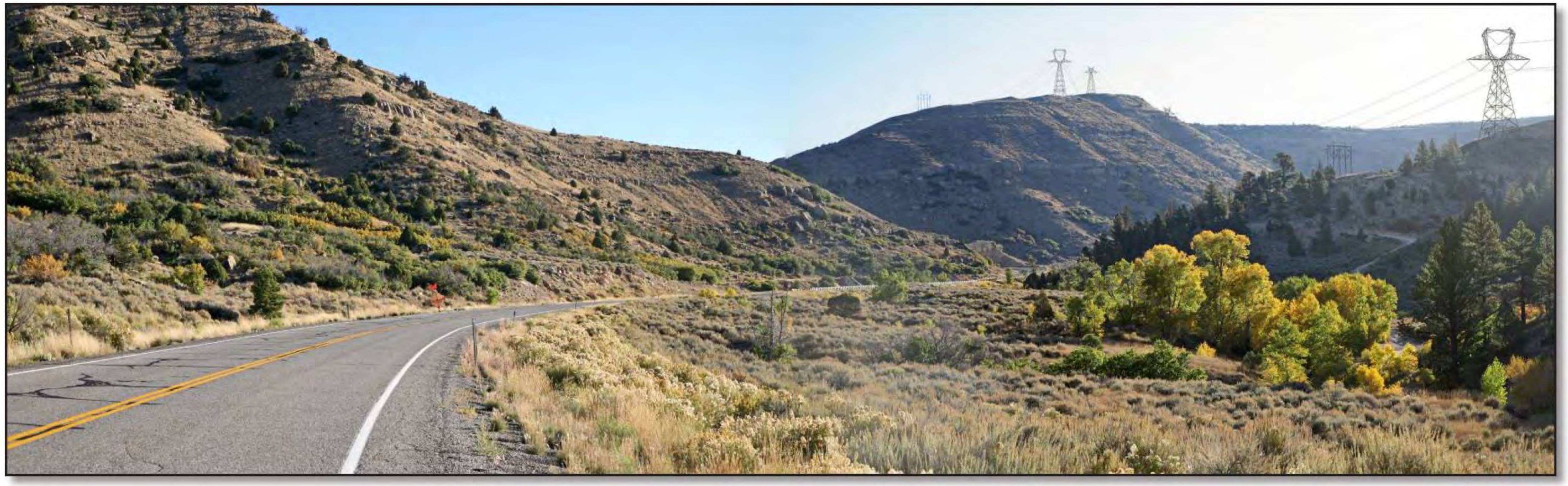
September 2015



Existing Condition – View looking northeast from U.S. Highway 191

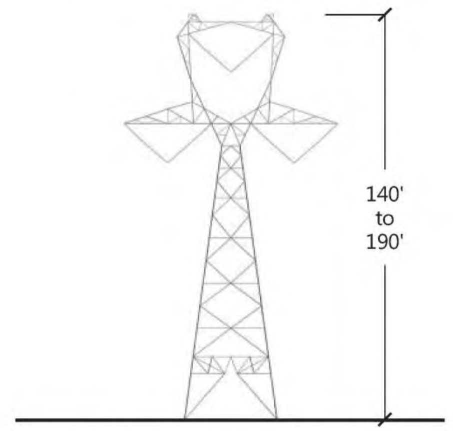

Indian Canyon Scenic Byway
Proposed Project Alternative (Link U435)
KOP #274
Existing 138kV Transmission Line
Proposed TransWest Express Transmission Line
191
8 miles to Helper, Utah
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternative COUT-H and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 28, 2011, 8:44 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 51-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

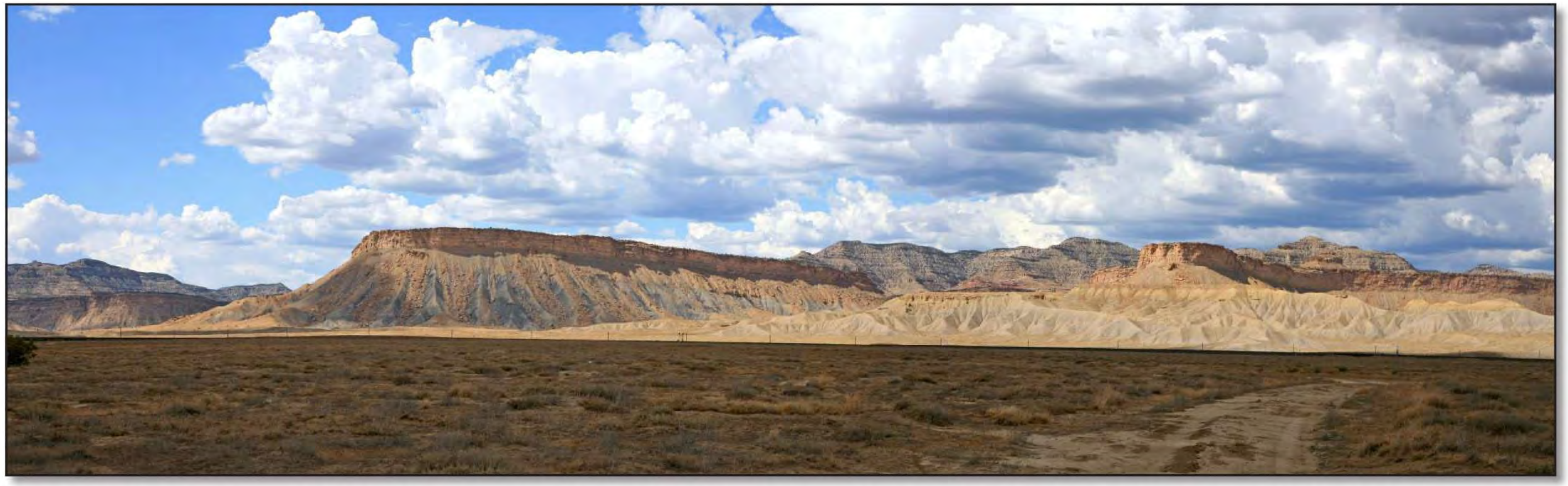
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

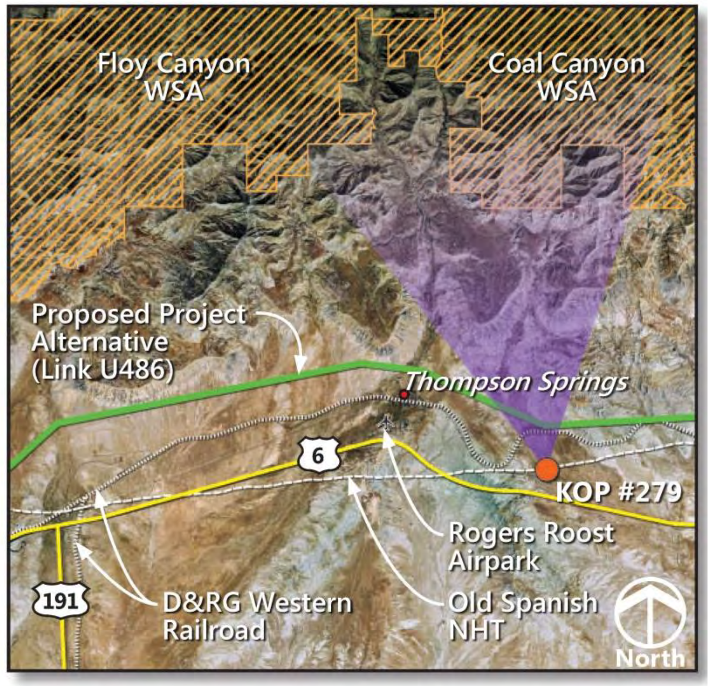
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #274 – Indian Canyon Scenic Byway (U.S. Highway 191) Cumulative Effects

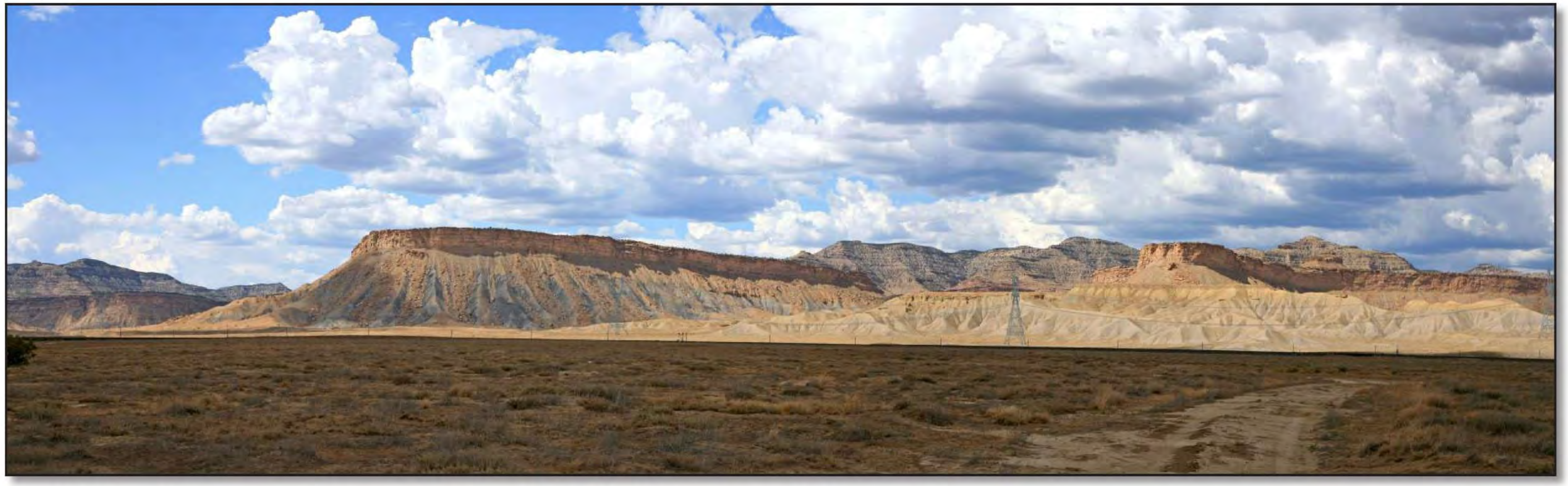
September 2015



Existing Condition – View looking north from the Old Spanish National Historic Trail, east of Thompson Springs, Utah, toward the Denver and Rio Grande (D&RG) Western Railroad and BLM VRM Class III lands

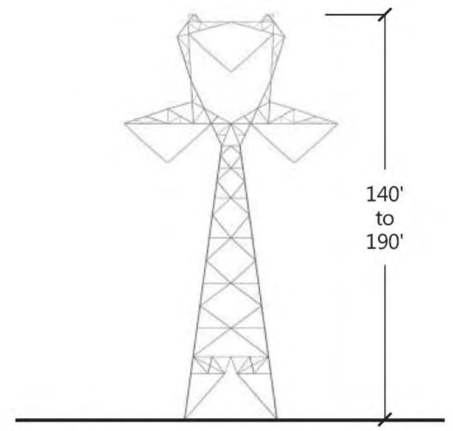


View Location: Approximate distance to proposed transmission line from photo location is 0.7 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

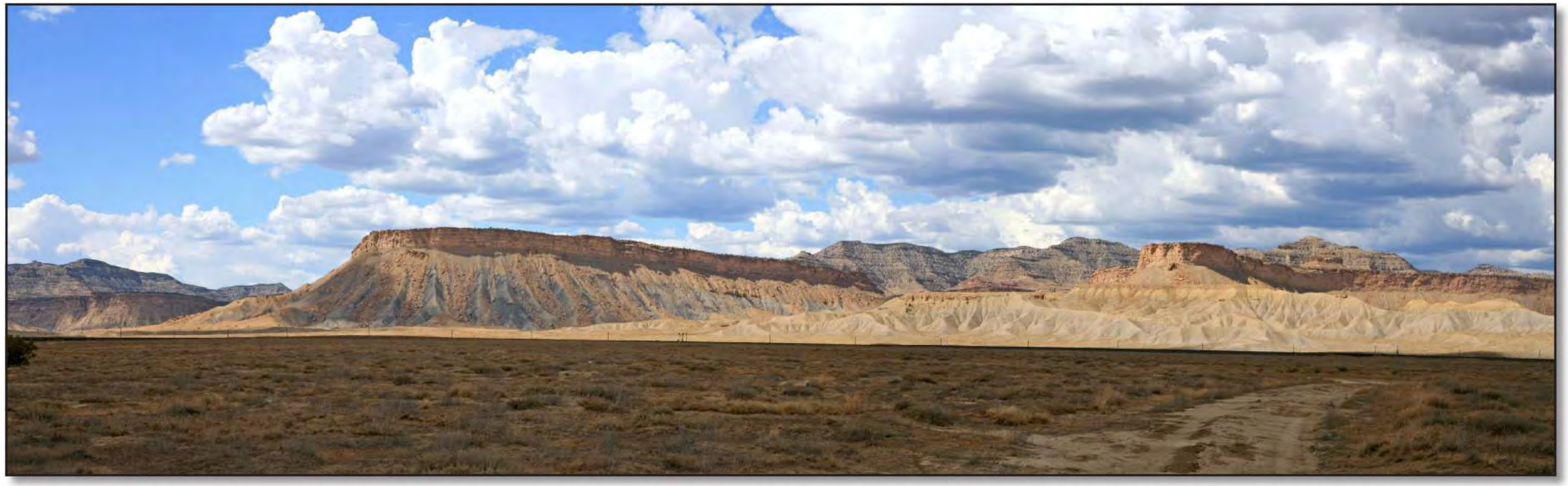
Photo Date and Time: July 23, 2012, 3:18 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 56-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

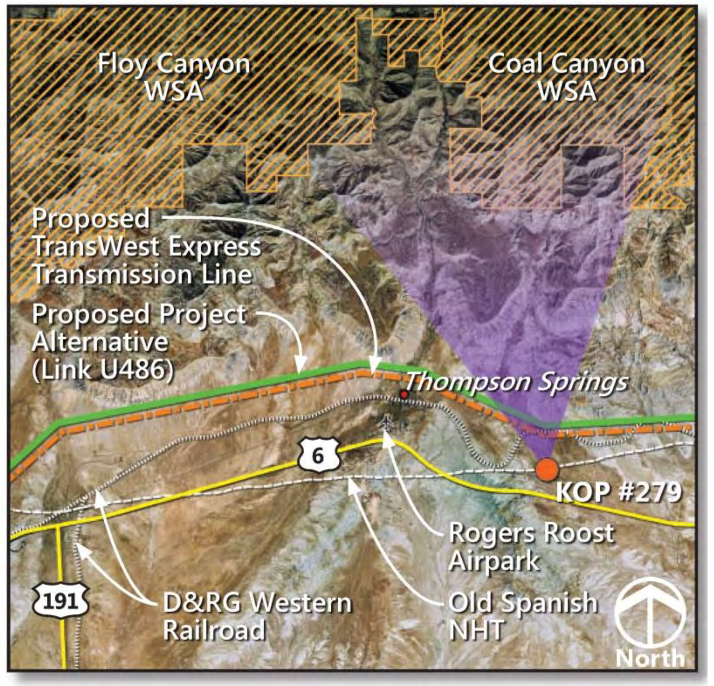
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #279 – Old Spanish National Historic Trail

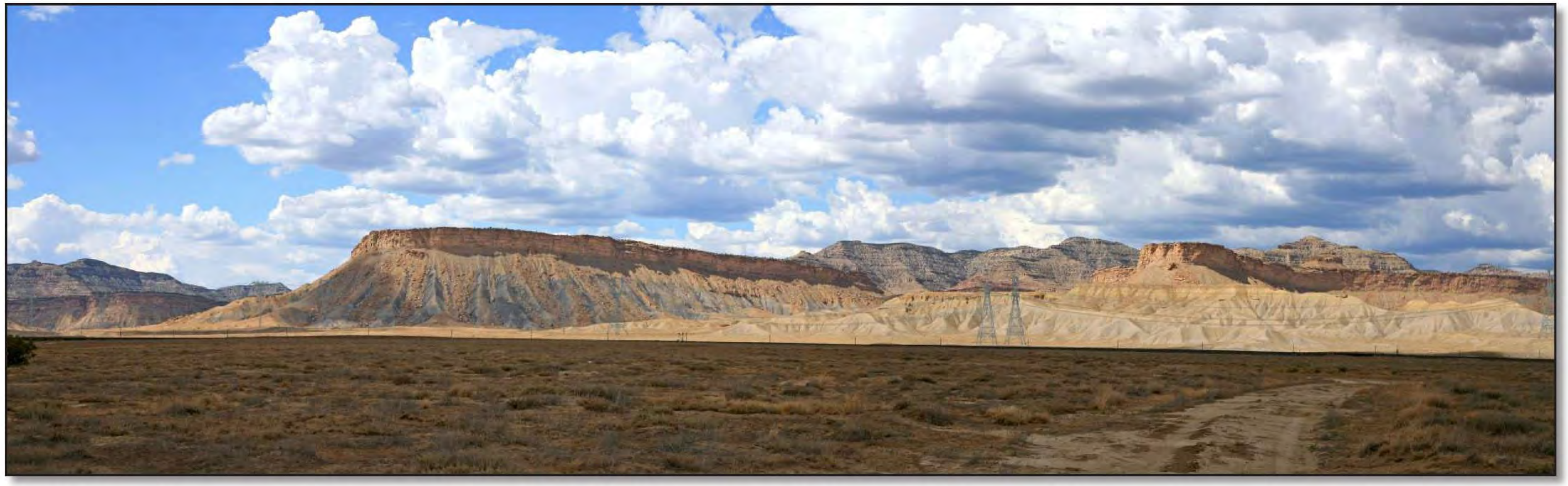
September 2015



Existing Condition – View looking north from the Old Spanish National Historic Trail, east of Thompson Springs, Utah, toward the Denver and Rio Grande (D&RG) Western Railroad and BLM VRM Class III lands

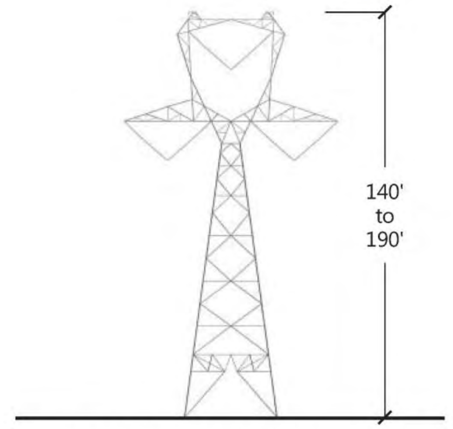


View Location: Approximate distance to proposed transmission line from photo location is 0.7 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 3:18 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 56-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

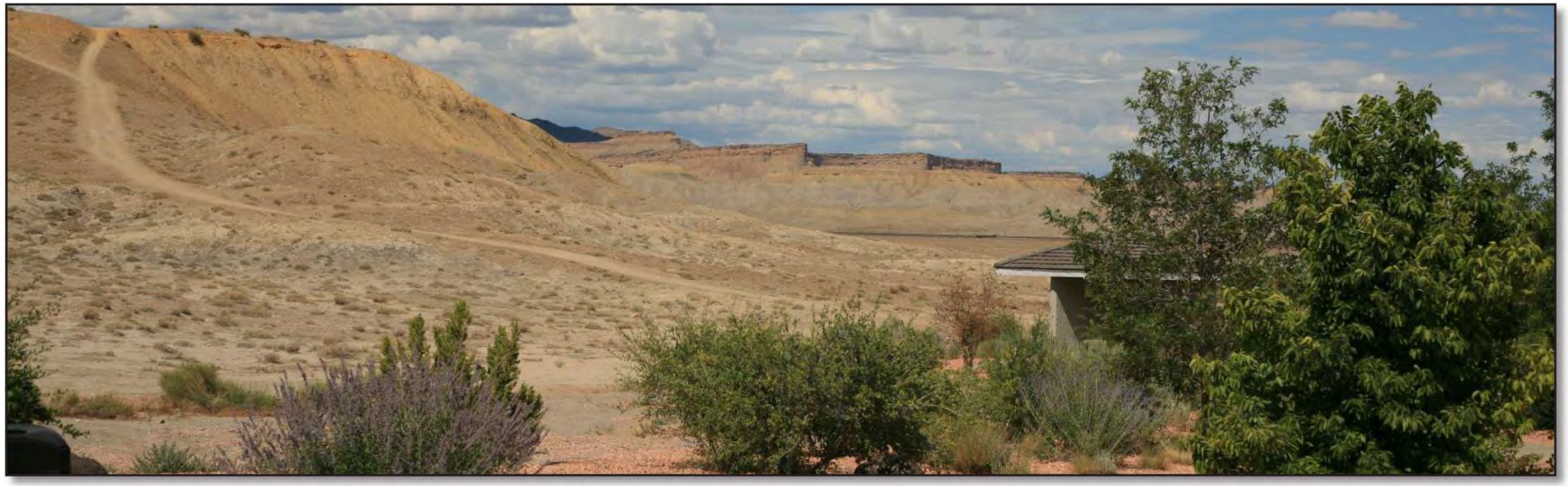
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

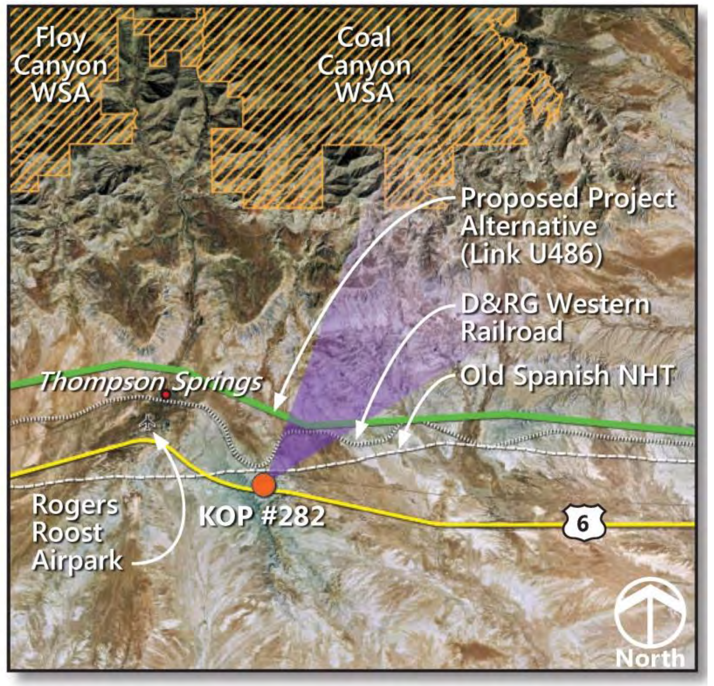
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #279 – Old Spanish National Historic Trail Cumulative Effects

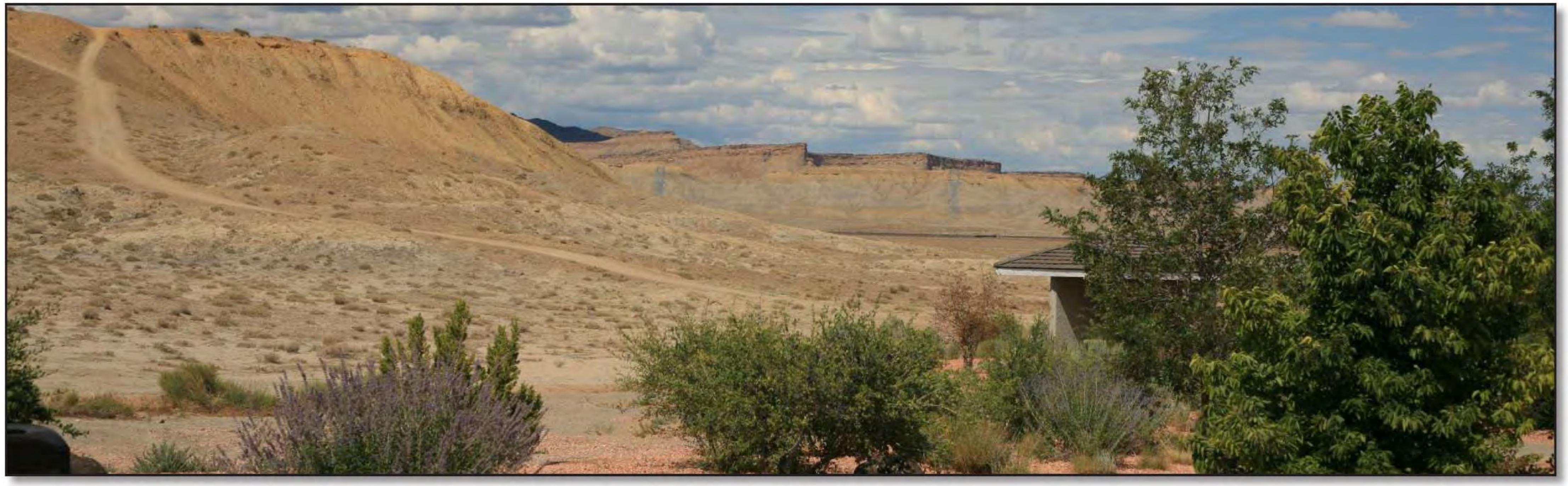
September 2015



Existing Condition – View looking northeast from the Thompson Welcome Center toward the Book Cliffs, the Denver and Rio Grande (D&RG) Western Railroad, and BLM VRM Class III lands

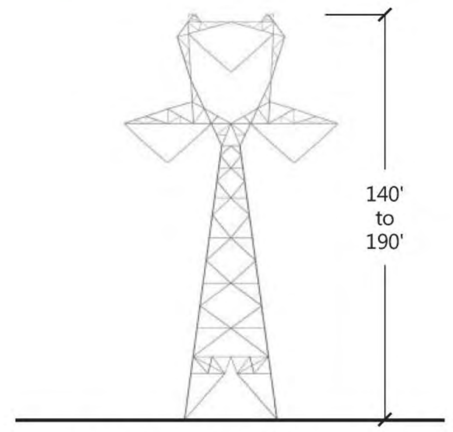


View Location: Approximate distance to proposed transmission line from photo location is 1.1 miles.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

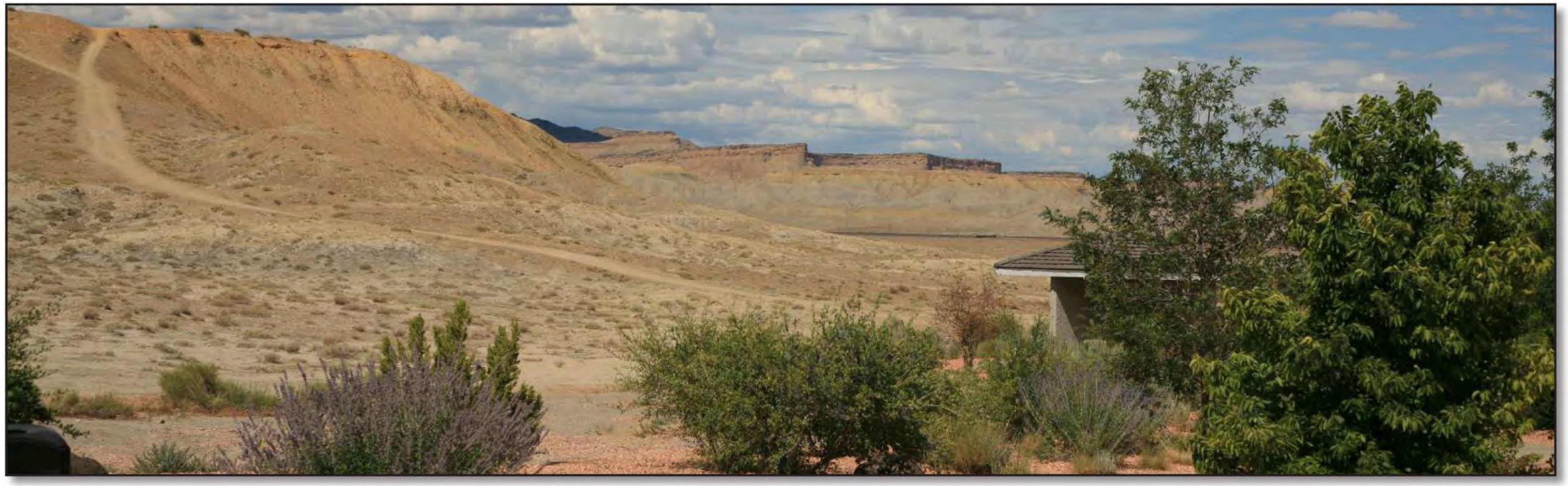
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #282 – Thompson Welcome Center

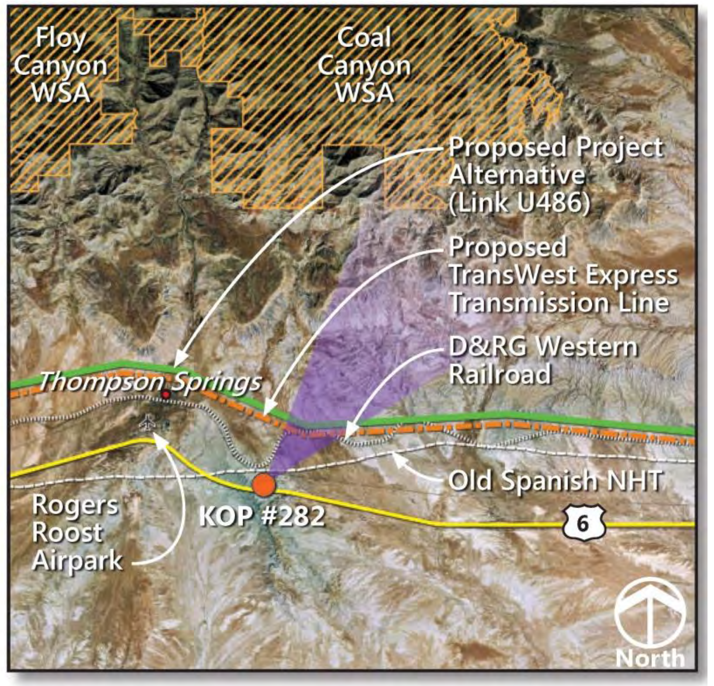
Photo Date and Time: July 23, 2012, 2:57 p.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

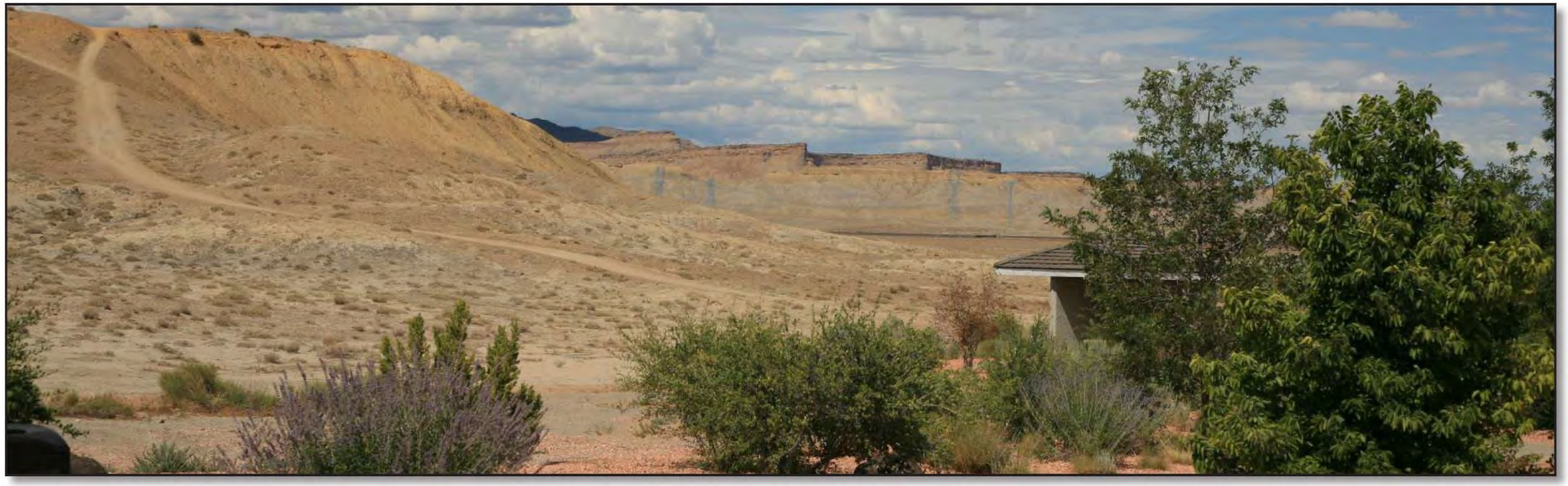
September 2015



Existing Condition – View looking northeast from the Thompson Welcome Center toward the Book Cliffs, the Denver and Rio Grande (D&RG) Western Railroad, and BLM VRM Class III lands

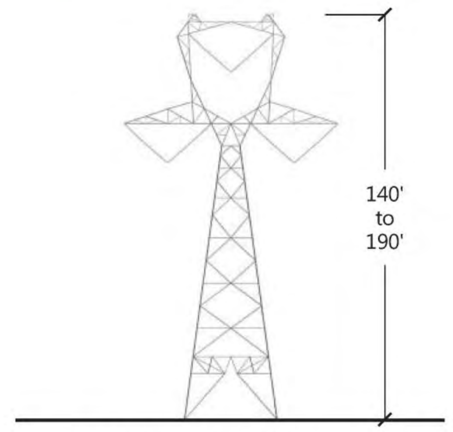


View Location: Approximate distance to proposed transmission line from photo location is 1.1 miles.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 2:57 p.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

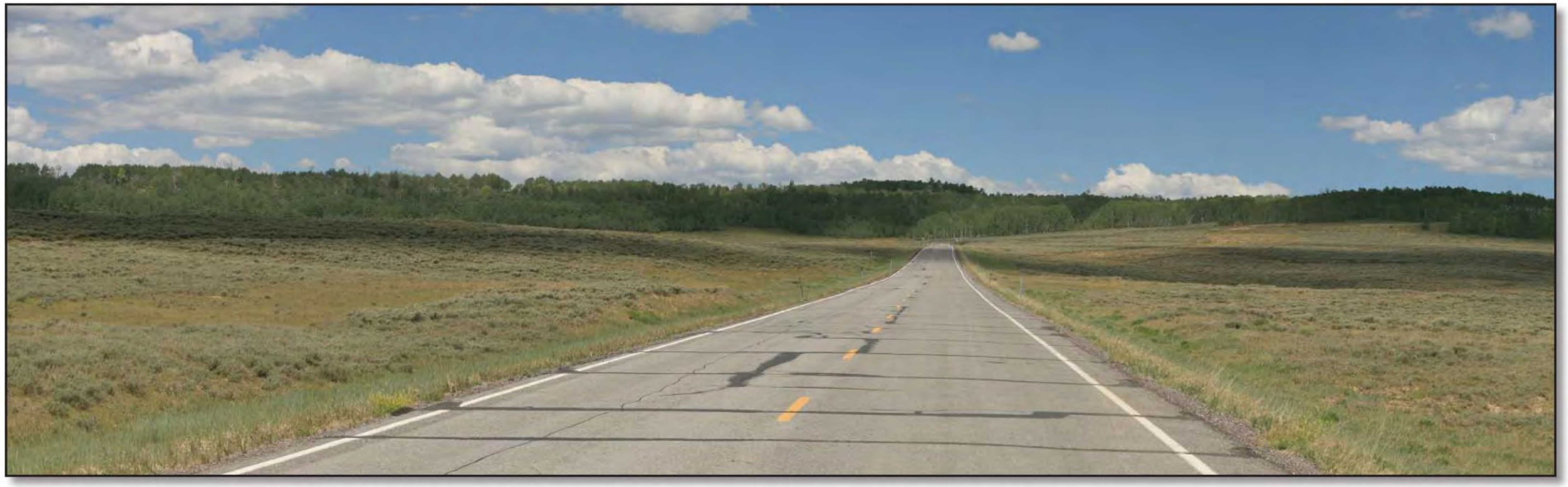
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

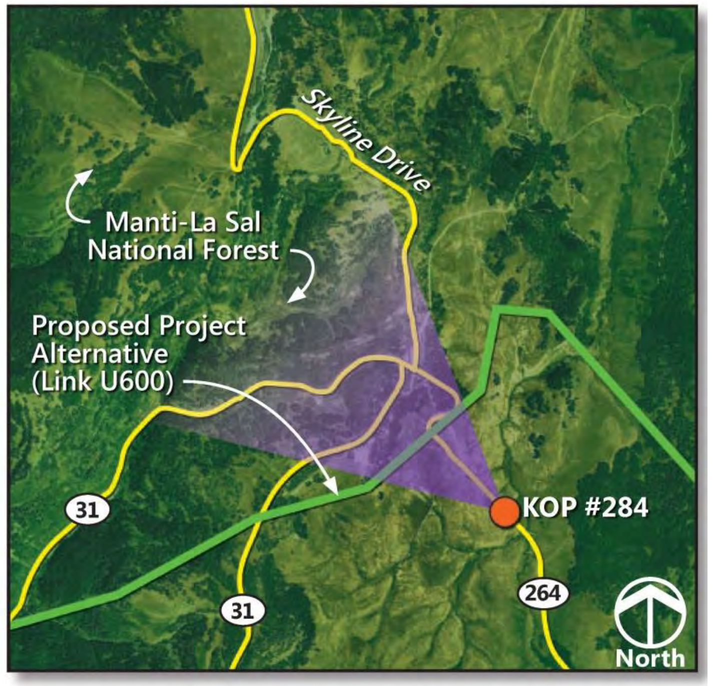
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #282 – Thompson Welcome Center Cumulative Effects

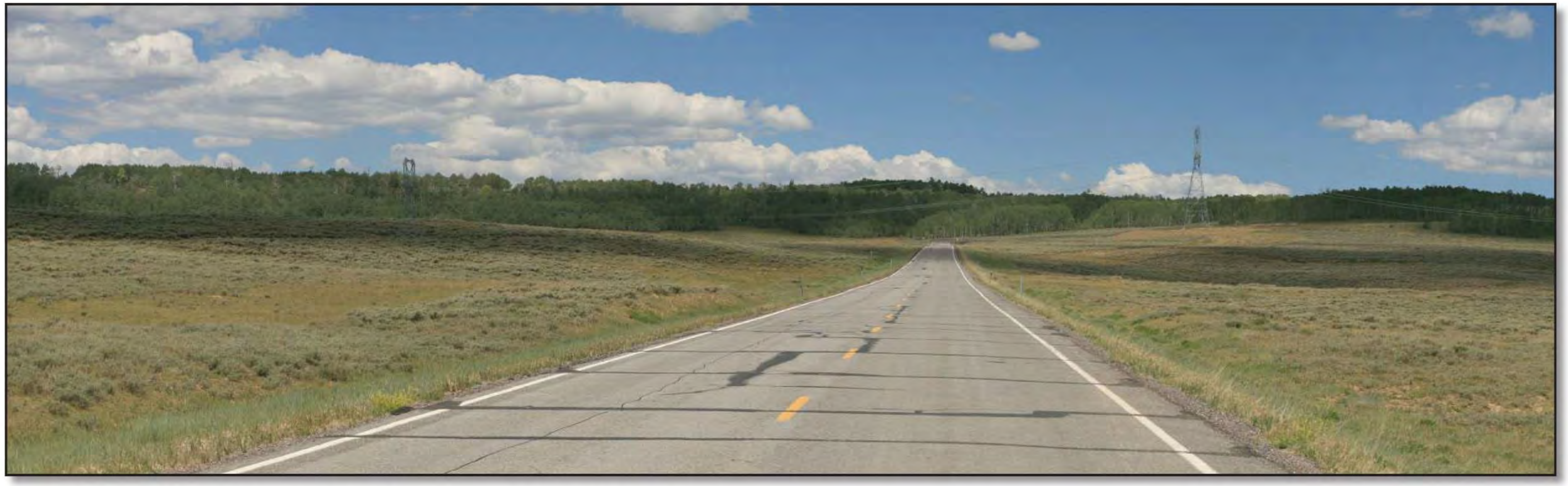
September 2015



Existing Condition – View looking northwest from Utah State Route 264 within the Manti-La Sal National Forest

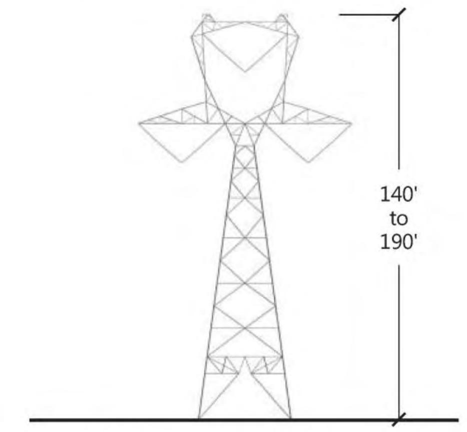

Skyline Drive
Manti-La Sal National Forest
Proposed Project Alternative (Link U600)
31
31
KOP #284
264
North

View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives COUT BAX-E and COUT-H

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized
self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

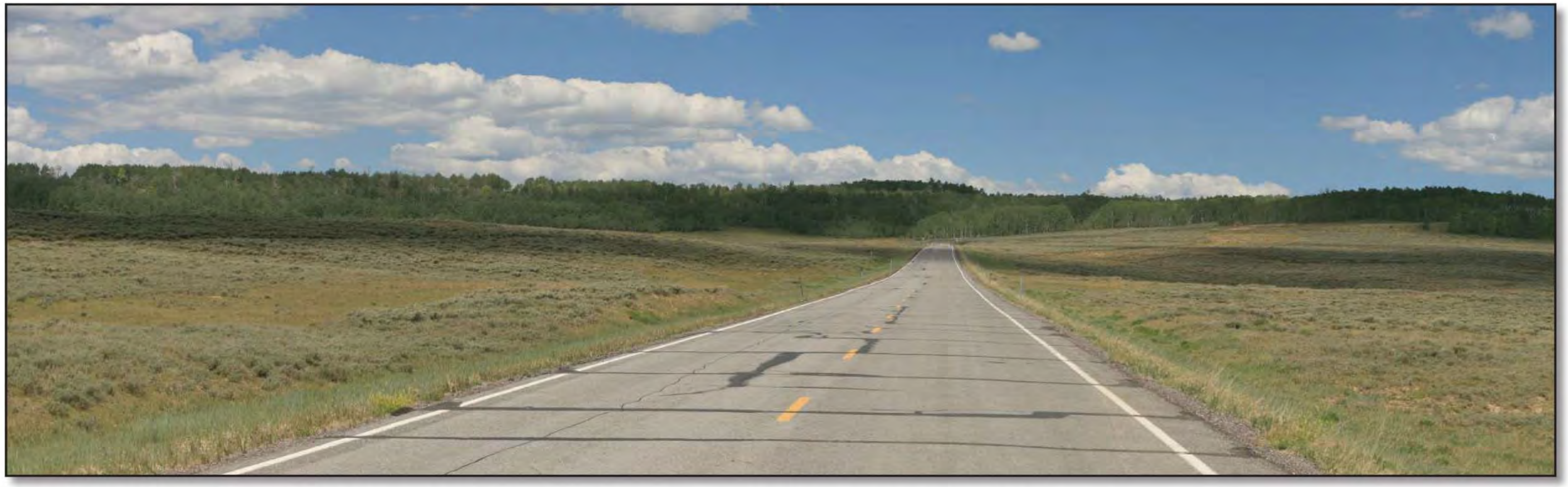
Photo Date and Time: July 26, 2011, 11:30 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 50-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

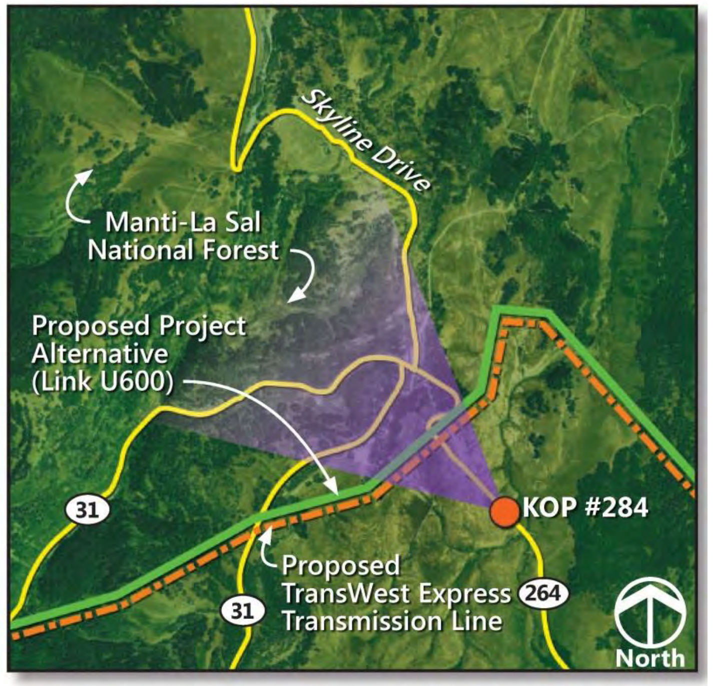
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #284 – Energy Loop Scenic Byway
(Utah SR 264)

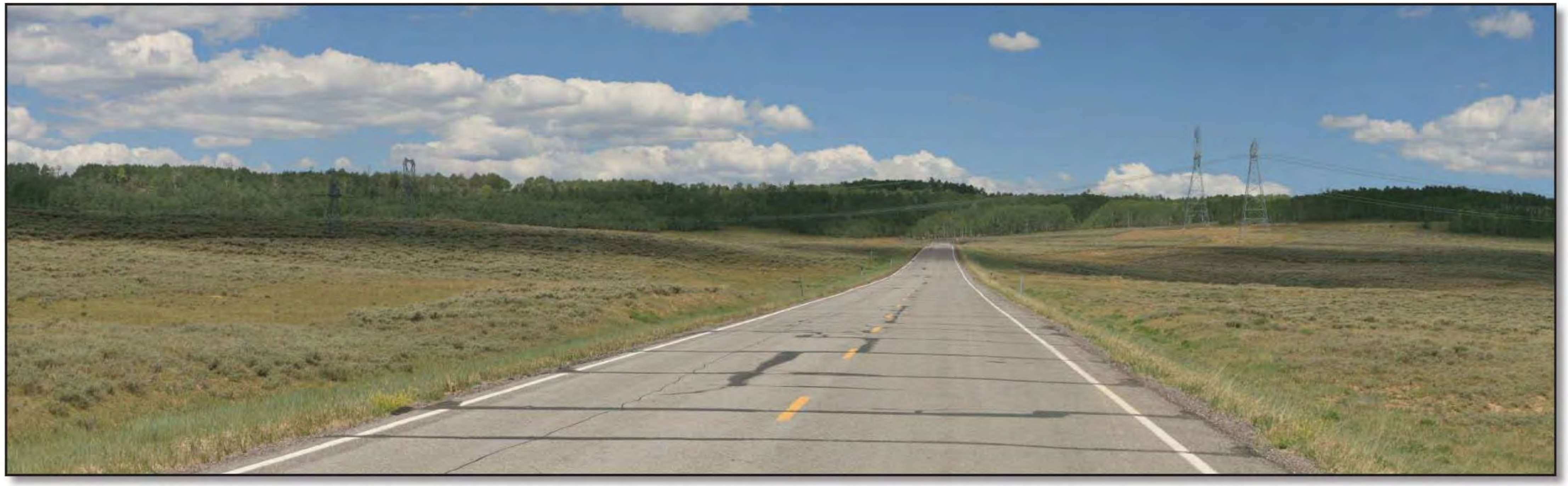
September 2015



Existing Condition – View looking northwest from Utah State Route 264 within the Manti-La Sal National Forest

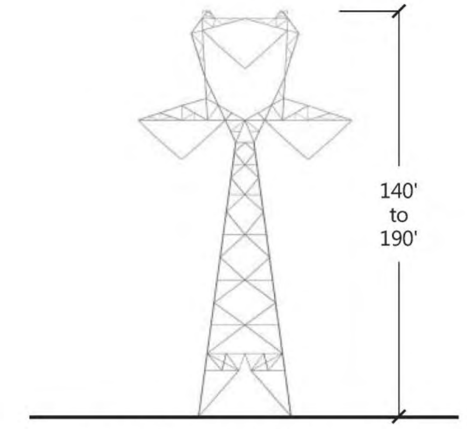

Skyline Drive
Manti-La Sal National Forest
Proposed Project Alternative (Link U600)
31
KOP #284
Proposed TransWest Express Transmission Line
264
31
North

View Location: Approximate distance to proposed transmission line from photo location is 0.5 mile.



Simulated Condition – View of Alternatives COUT BAX-E and COUT-H and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 26, 2011, 11:30 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 50-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

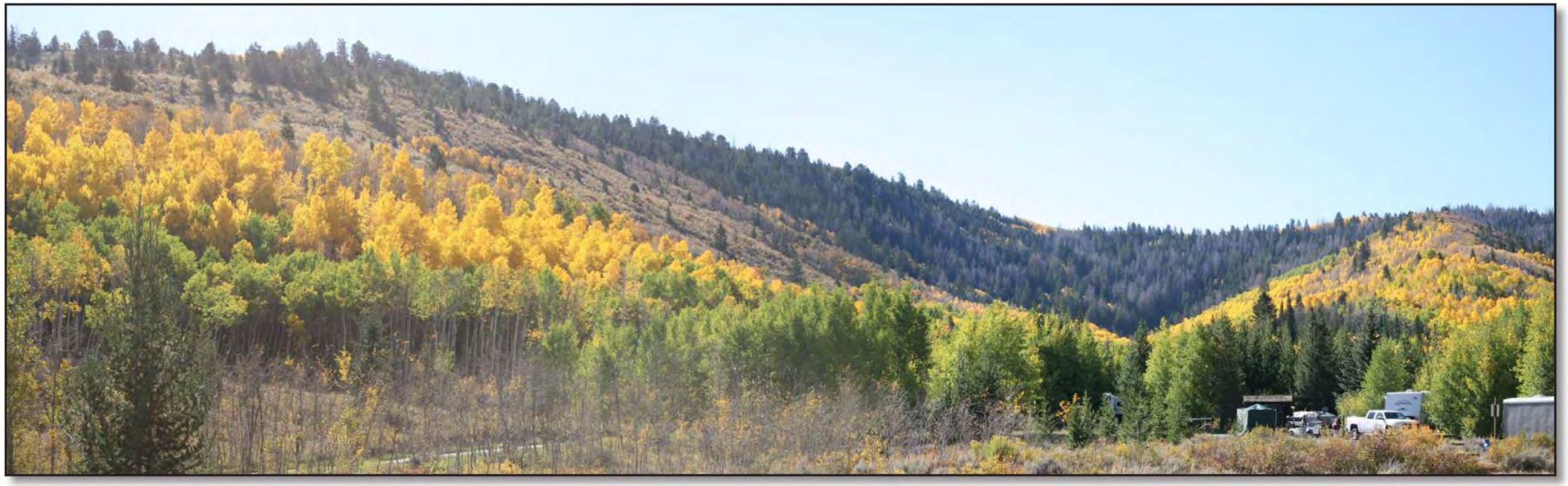
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

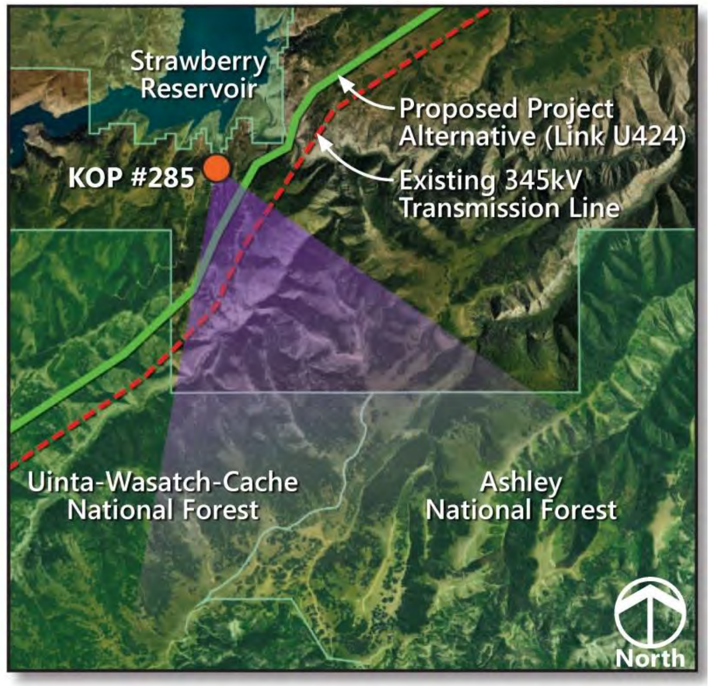
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #284 – Energy Loop Scenic Byway (Utah SR 264) Cumulative Effects

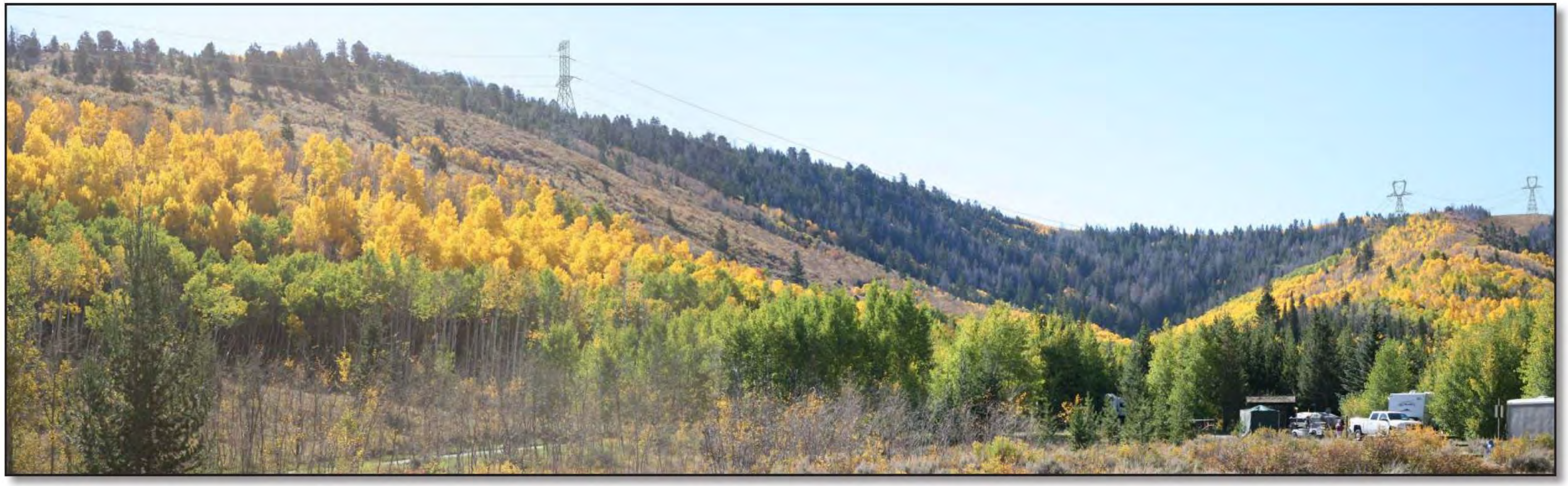
September 2015



Existing Condition – View looking south from the Aspen Grove Campground, south of Strawberry Reservoir, in the Uinta-Wasatch-Cache National Forest

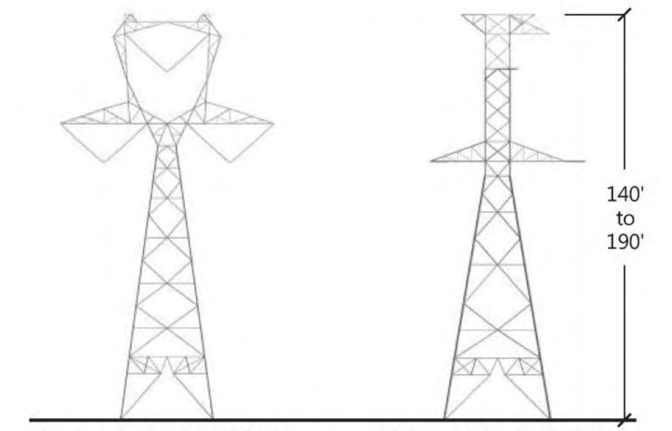

Strawberry Reservoir
KOP #285
Proposed Project Alternative (Link U424)
Existing 345kV Transmission Line
Uinta-Wasatch-Cache National Forest
Ashley National Forest
North

View Location: Approximate distance to proposed transmission line from photo location is 0.6 mile.



Simulated Condition – View of Alternative COUT-A

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

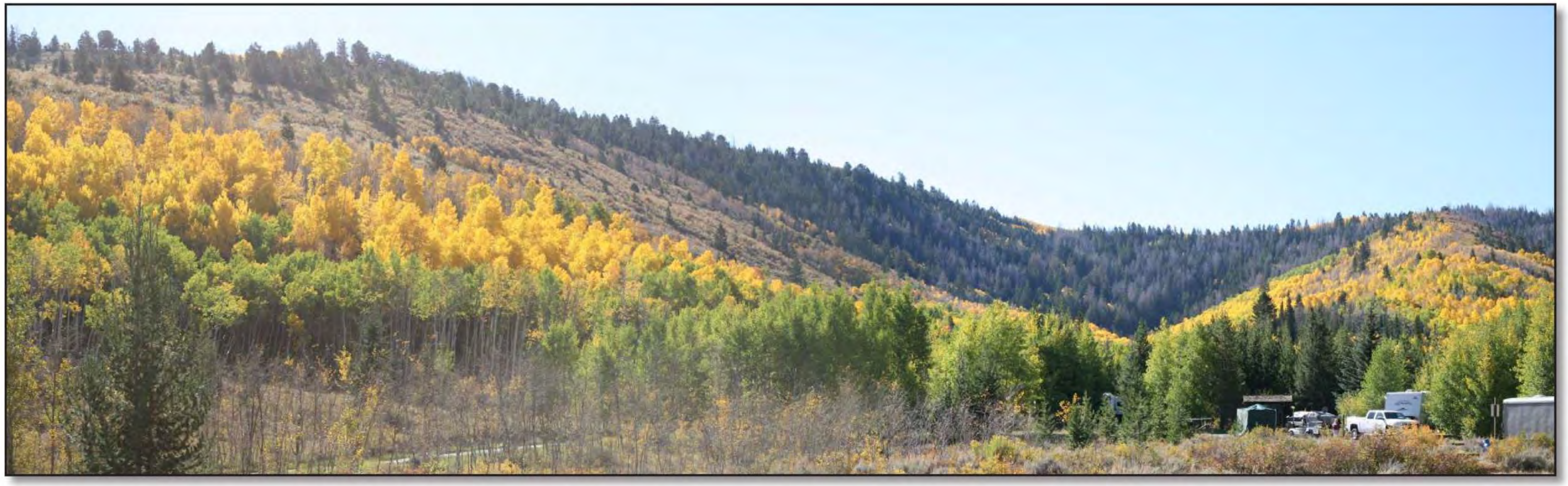
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

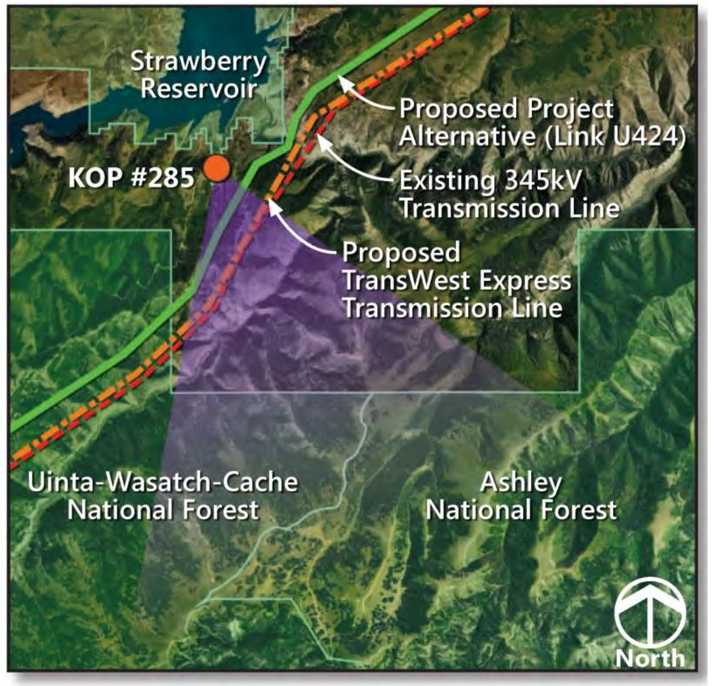
KOP #285 – Aspen Grove Campground

Photo Date and Time: September 30, 2011, 10:51 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 61-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

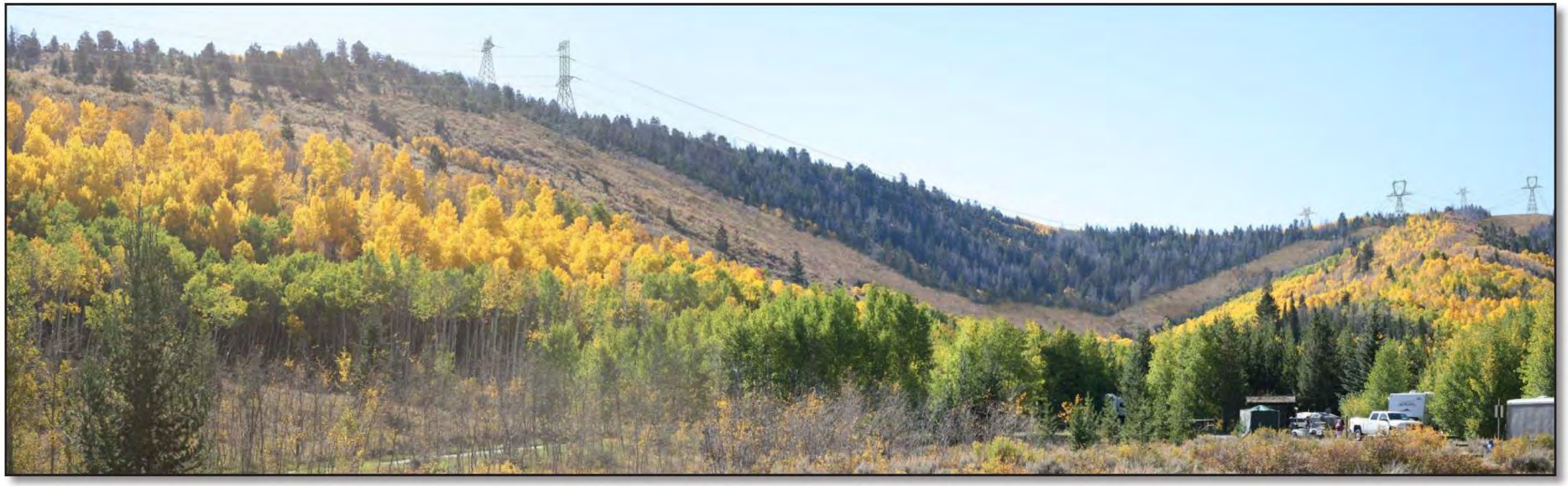
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking south from the Aspen Grove Campground, south of Strawberry Reservoir, in the Uinta-Wasatch-Cache National Forest

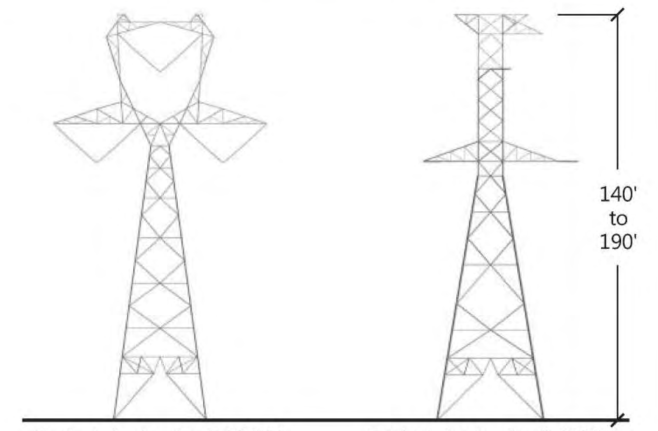

Strawberry Reservoir
KOP #285
Proposed Project Alternative (Link U424)
Existing 345kV Transmission Line
Proposed TransWest Express Transmission Line
Uinta-Wasatch-Cache National Forest
Ashley National Forest
North

View Location: Approximate distance to proposed transmission line from photo location is 0.6 mile.



Simulated Condition – View of Alternative COUT-A and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

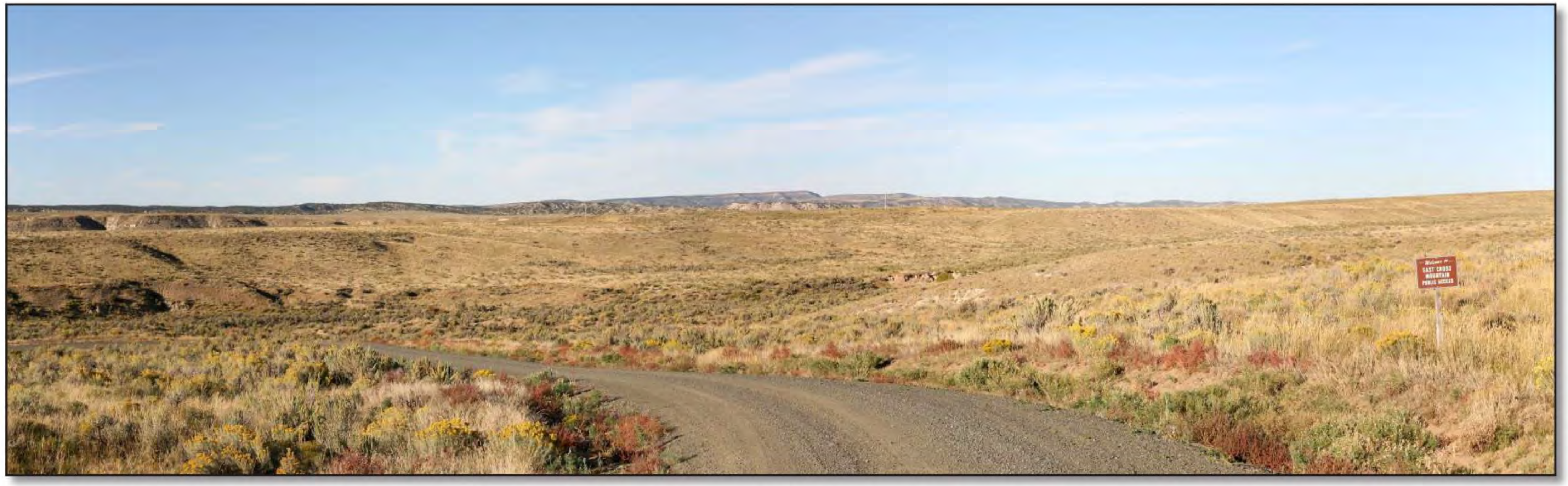
KOP #285 – Aspen Grove Campground Cumulative Effects

Photo Date and Time: September 30, 2011, 10:51 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 61-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

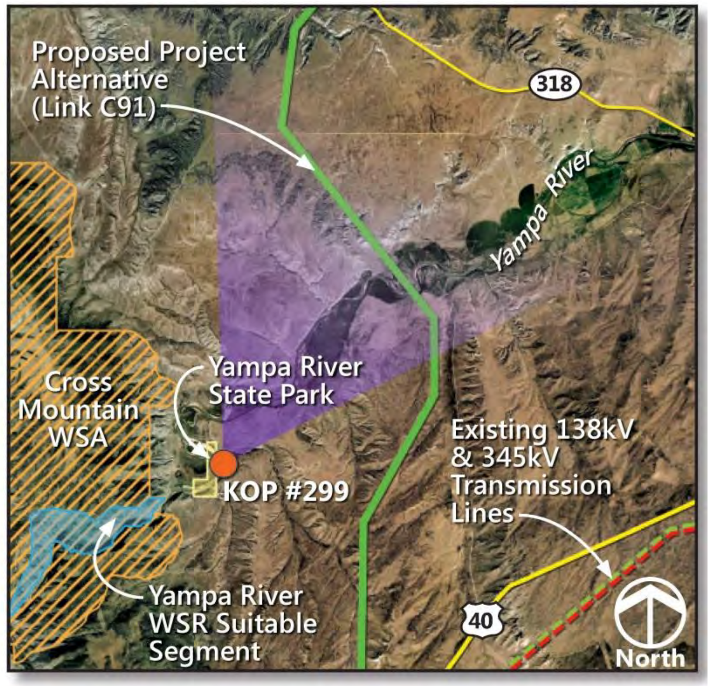
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

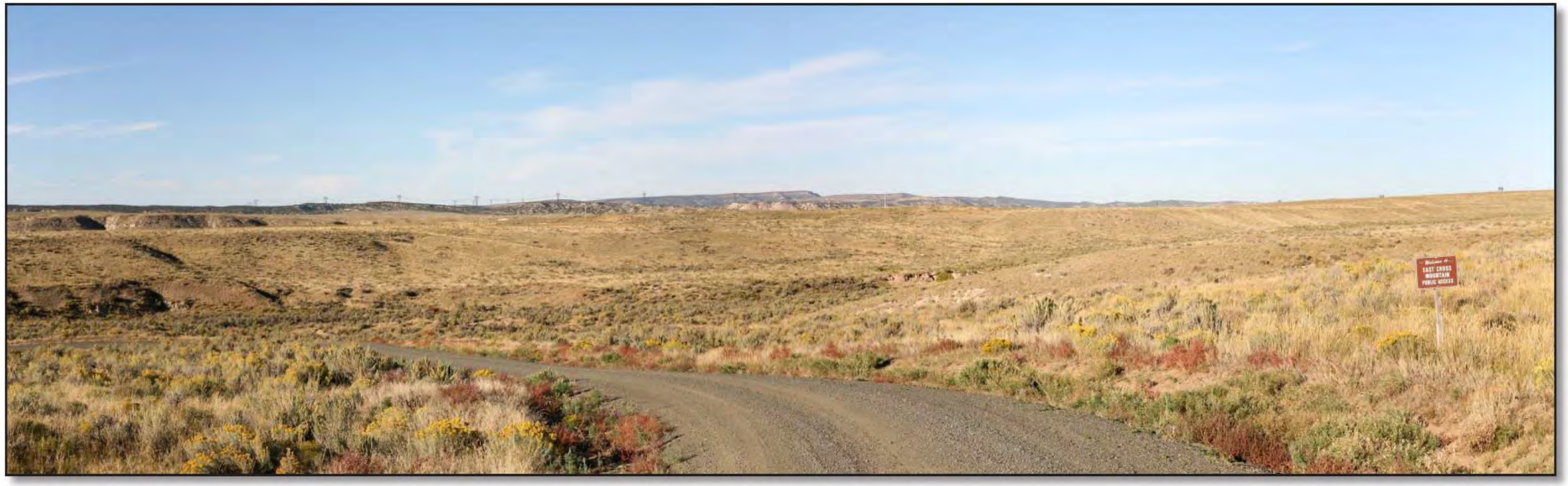
September 2015



Existing Condition – View looking northeast from the Yampa River access road (which provides access to the Cross Mountain WSA) toward BLM VRM Class III lands

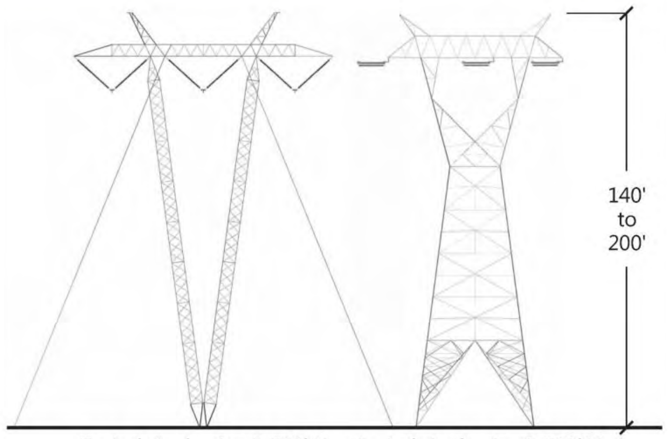

Proposed Project Alternative (Link C91)
318
Yampa River
Cross Mountain WSA
Yampa River State Park
KOP #299
Existing 138kV & 345kV Transmission Lines
Yampa River WSR Suitable Segment
40
North

View Location: Approximate distance to proposed transmission line from photo location is 3 miles.



Simulated Condition – View of Alternatives WYCO-B, WYCO-C, and WYCO-F[1]

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Note:[1] This view is in vicinity of Series Compensation Station Siting Area C – Maybell. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

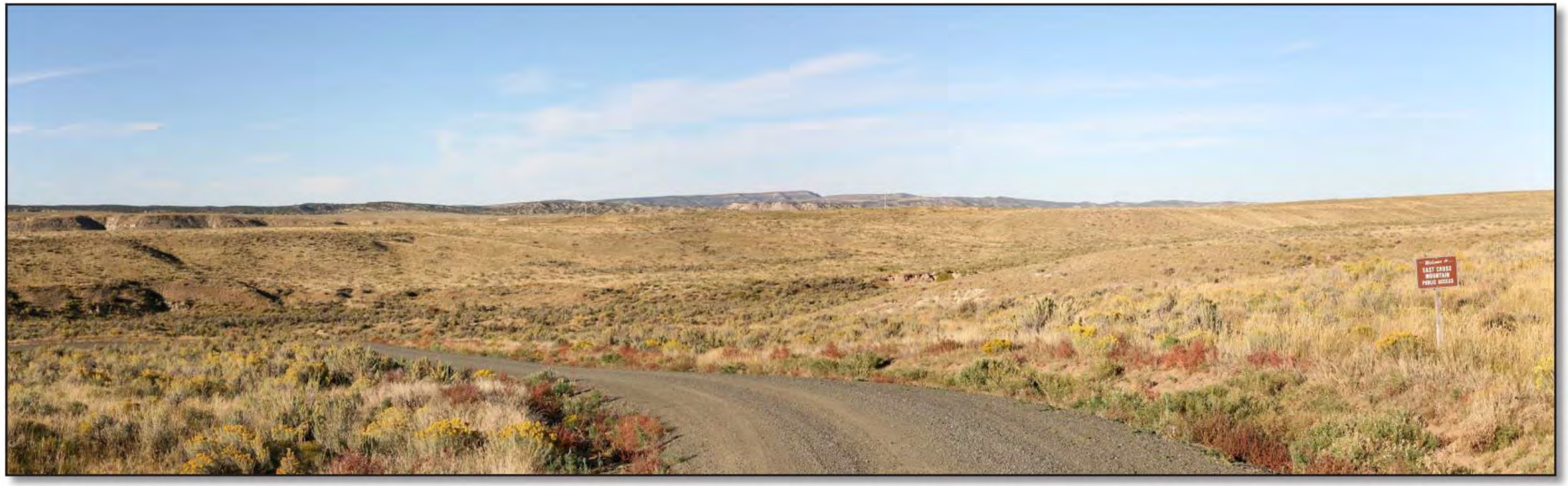
Photo Date and Time: September 27, 2011, 5:32 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 69-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

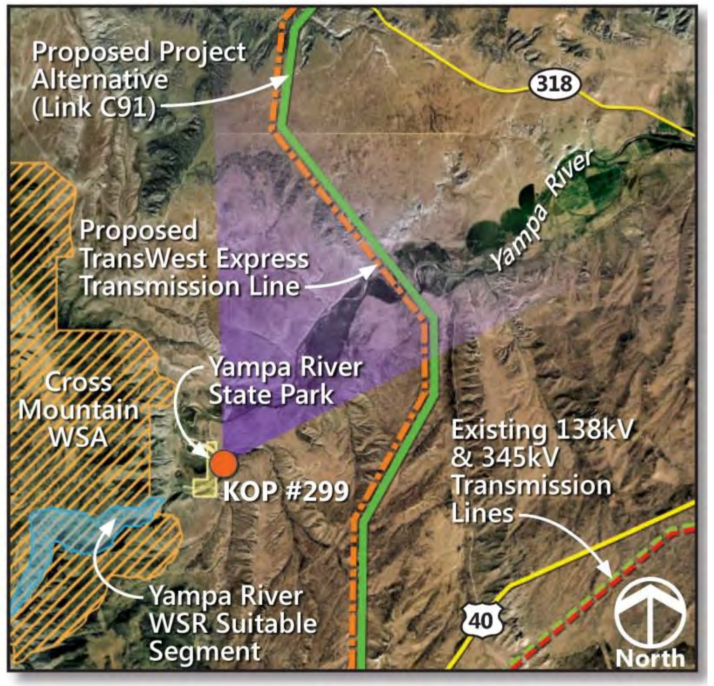
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #299 – East Cross Mountain River Access (Yampa River)

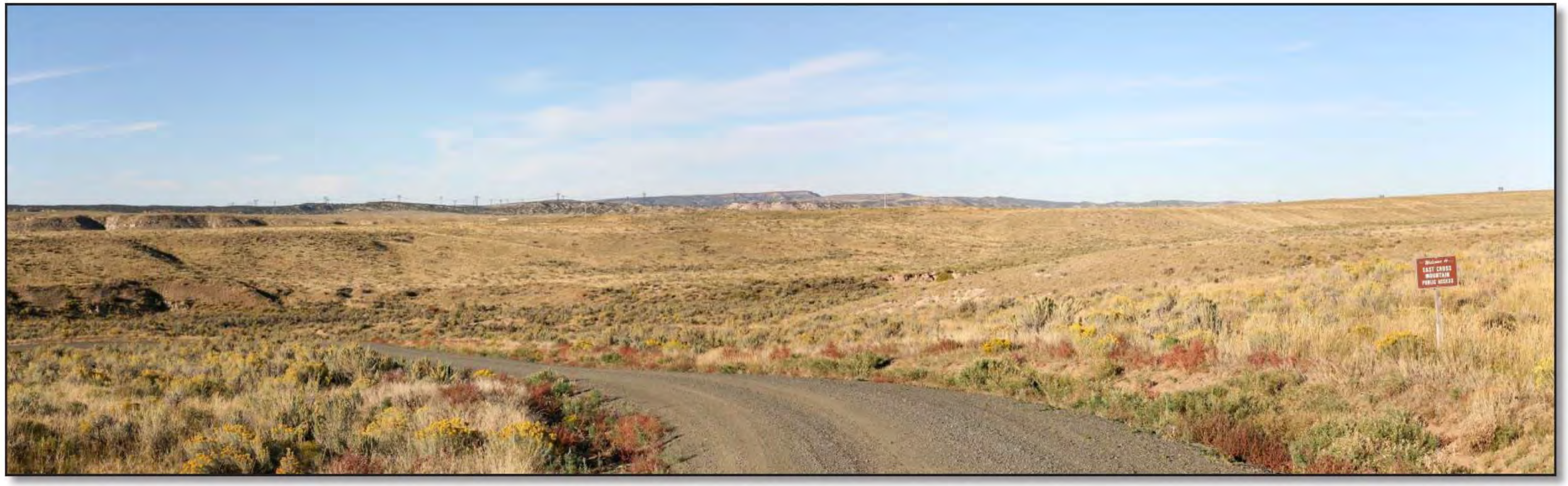
September 2015



Existing Condition – View looking northeast from the Yampa River access road (which provides access to the Cross Mountain WSA) toward BLM VRM Class III lands

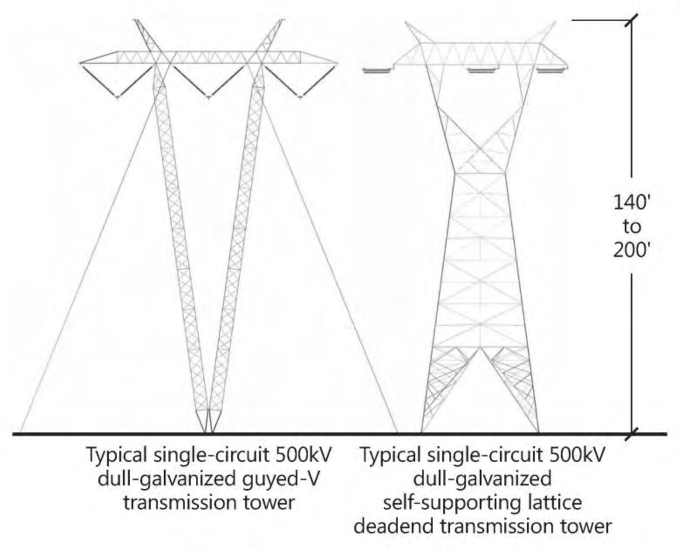

Proposed Project Alternative (Link C91)
318
Yampa River
Proposed TransWest Express Transmission Line
Cross Mountain WSA
Yampa River State Park
KOP #299
Existing 138kV & 345kV Transmission Lines
Yampa River WSR Suitable Segment
40
North

View Location: Approximate distance to proposed transmission line from photo location is 3 miles.



Simulated Condition – View of Alternatives WYCO-B, WYCO-C, and WYCO-F, and the proposed TransWest Express transmission line[1]

500kV TOWER STRUCTURE DIAGRAMS


140' to 200'
Typical single-circuit 500kV dull-galvanized guyed-V transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Note:[1] This view is in vicinity of Series Compensation Station Siting Area C – Maybell. Based on the final location, this facility may be visible and result in stronger visual contrast from this viewpoint.

Photo Date and Time: September 27, 2011, 5:32 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 69-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

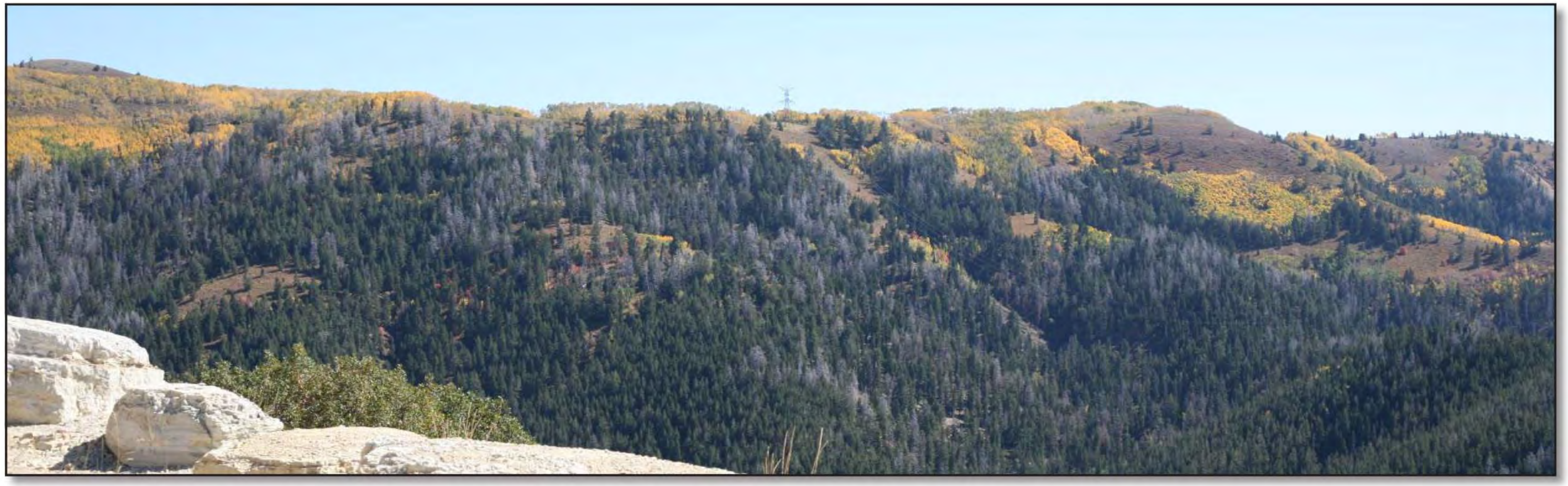
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

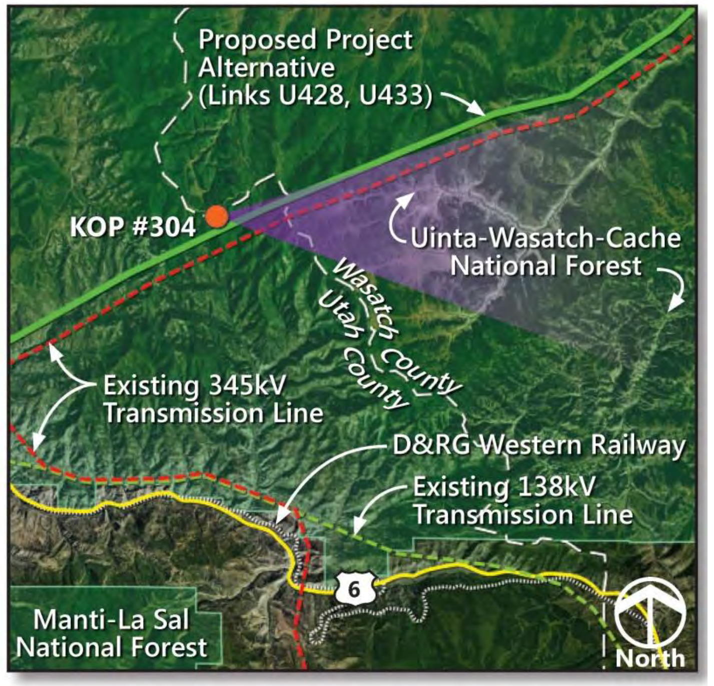
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #299 – East Cross Mountain River Access (Yampa River) Cumulative Effects

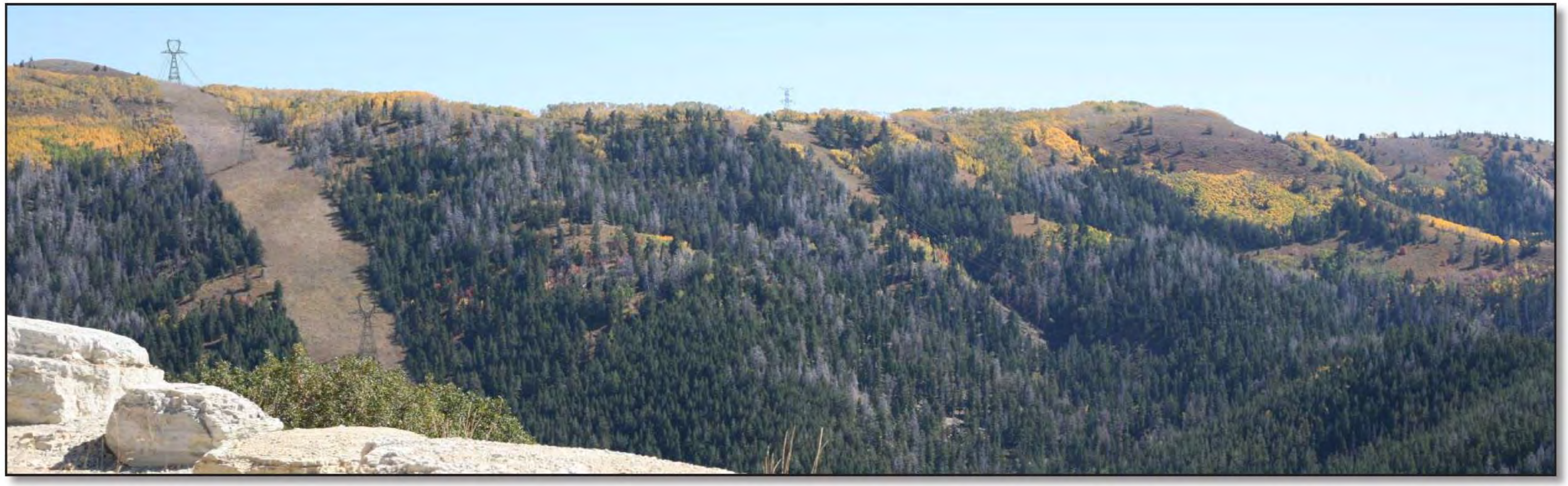
September 2015



Existing Condition – View looking east from Sheep Creek Road (Forest Road 042) in the Uinta-Wasatch-Cache National Forest

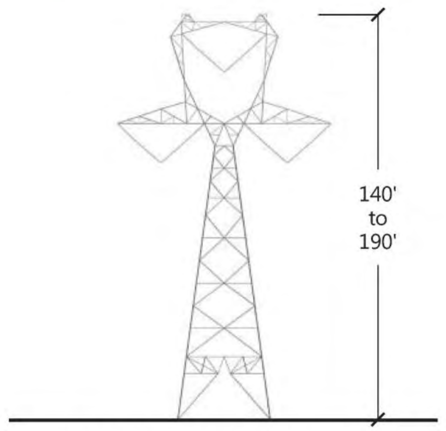

Proposed Project Alternative (Links U428, U433)
KOP #304
Uinta-Wasatch-Cache National Forest
Wasatch County
Utah County
Existing 345kV Transmission Line
D&RG Western Railway
Existing 138kV Transmission Line
6
Manti-La Sal National Forest
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Chipman Creek Variation 1

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

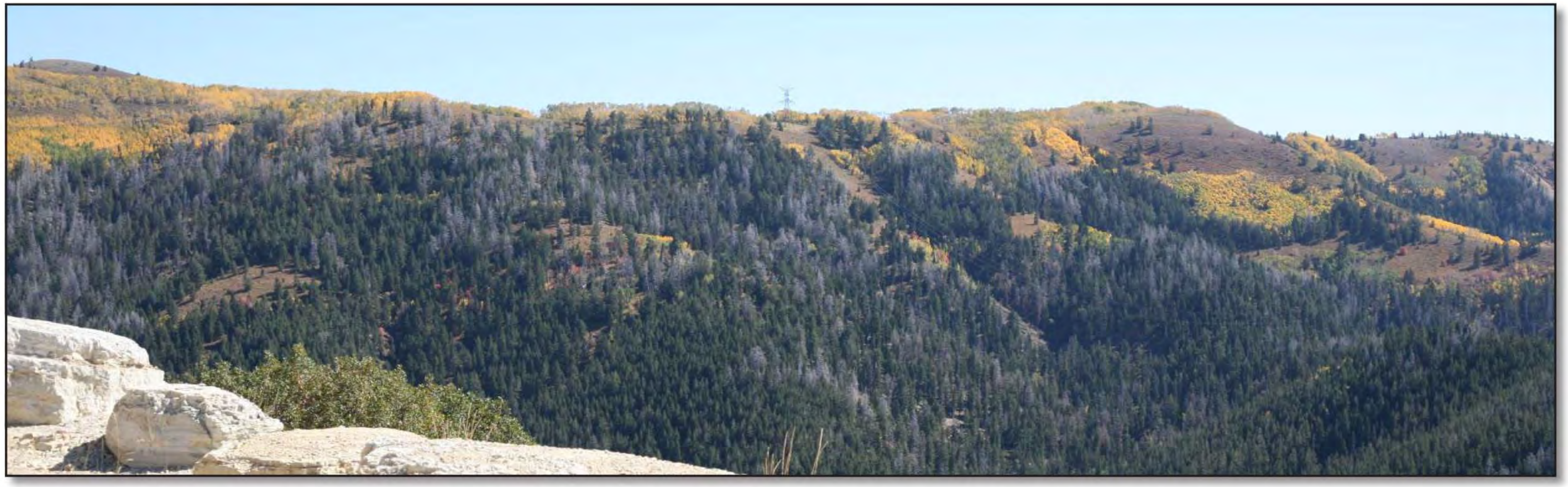
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

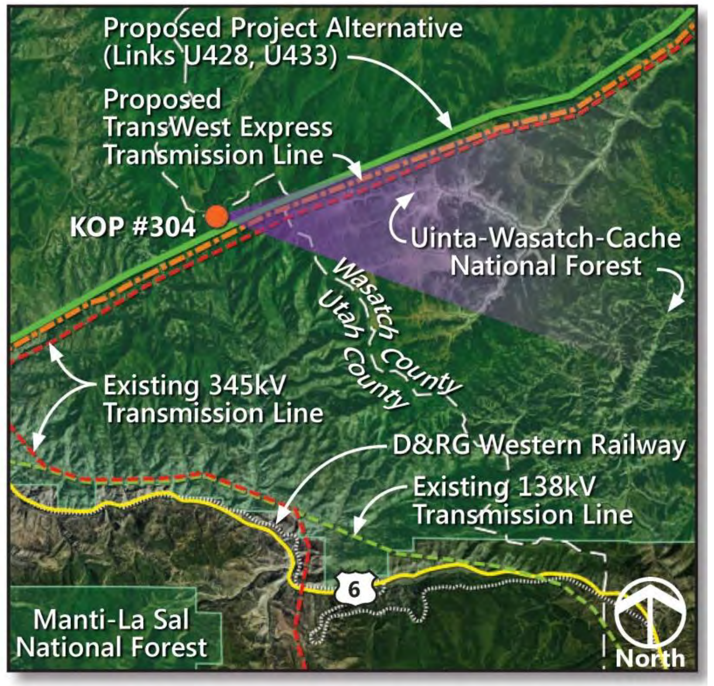
KOP #304 – Sheep Creek Road (FR 042)

Photo Date and Time: September 30, 2011, 11:24 a.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

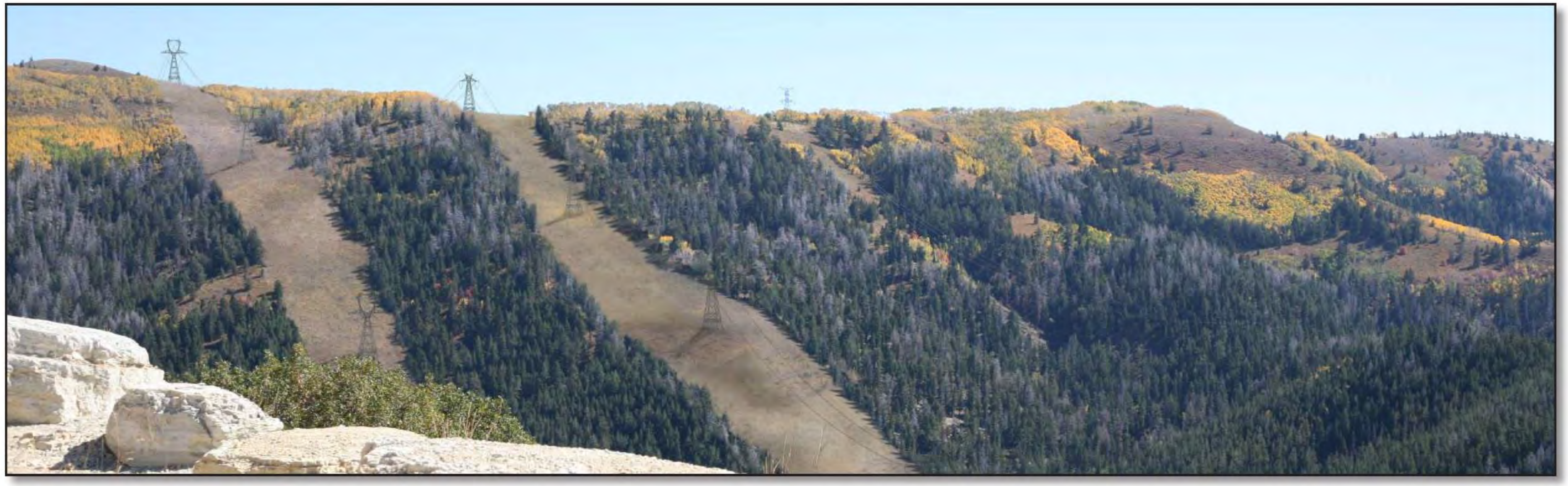
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking east from Sheep Creek Road (Forest Road 042) in the Uinta-Wasatch-Cache National Forest

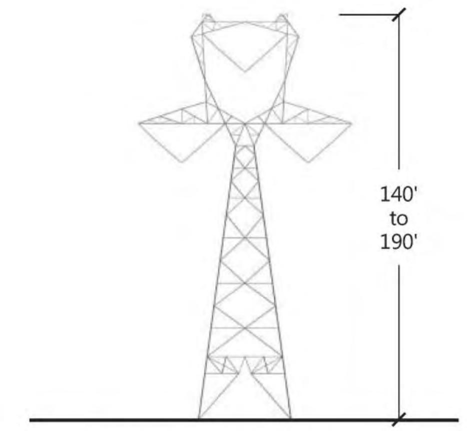

Proposed Project Alternative (Links U428, U433)
Proposed TransWest Express Transmission Line
KOP #304
Uinta-Wasatch-Cache National Forest
Wasatch County
Utah County
Existing 345kV Transmission Line
D&RG Western Railway
Existing 138kV Transmission Line
6
Manti-La Sal National Forest
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Chipman Creek Variation 1 and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 30, 2011, 11:24 a.m. Focal Length: 50mm
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

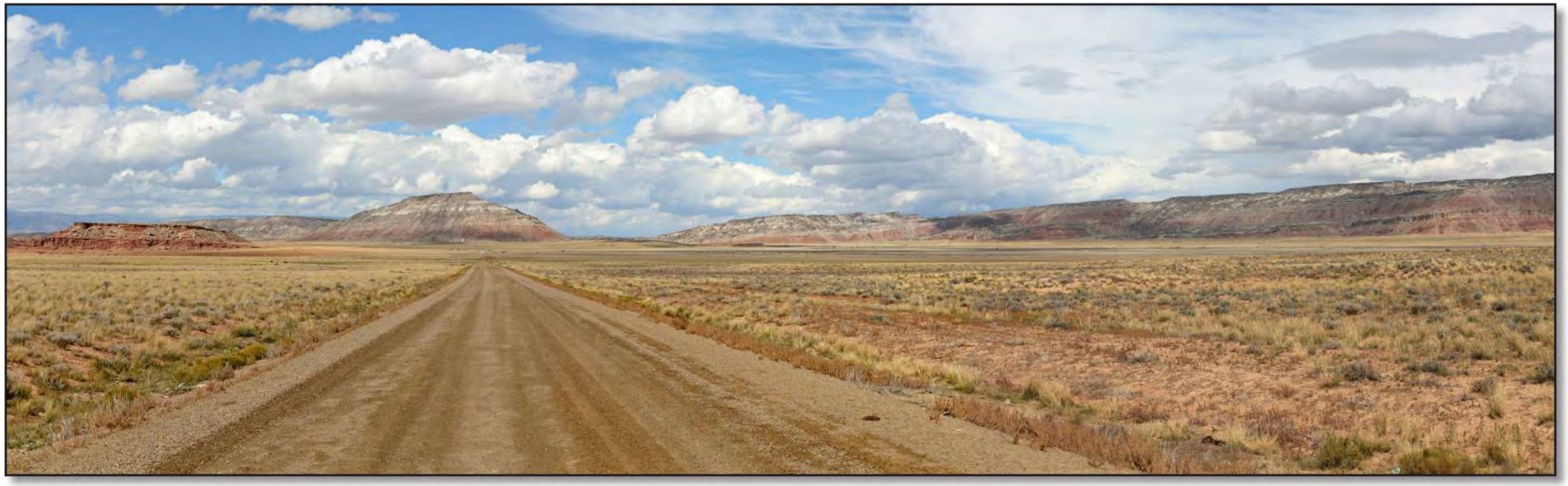
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

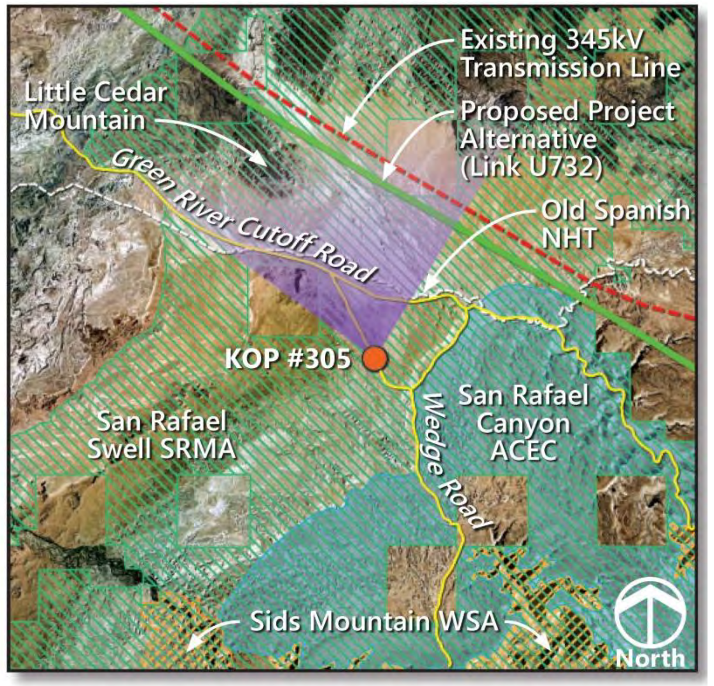
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #304 – Sheep Creek Road (FR 042) Cumulative Effects

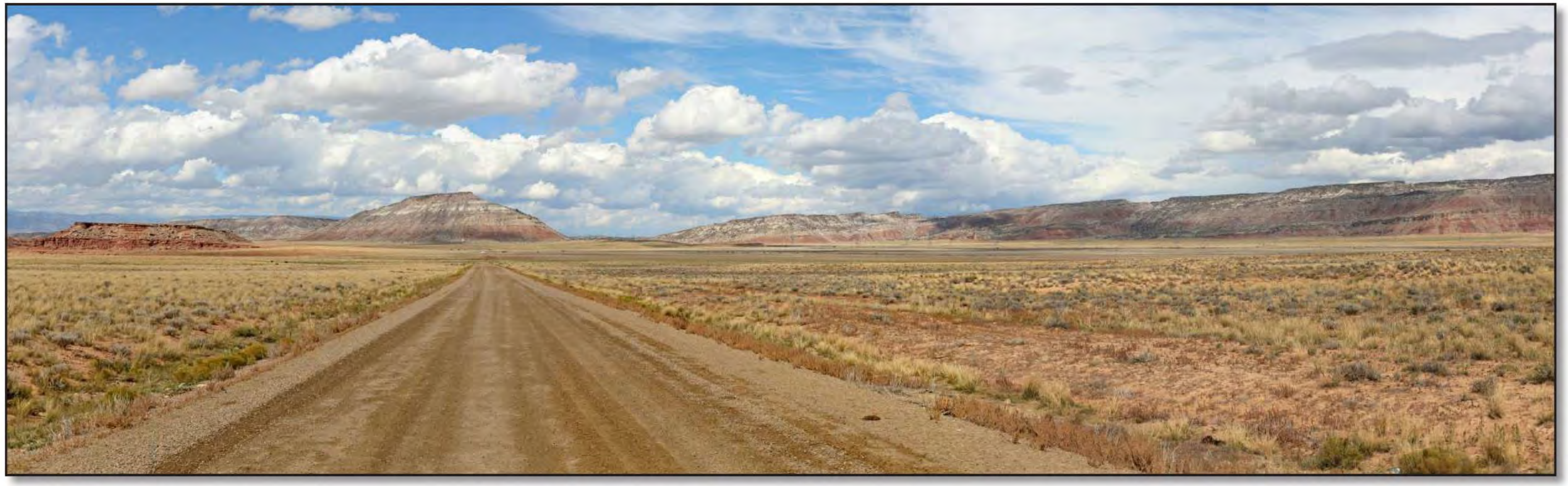
September 2015



Existing Condition – View looking north from the Wedge Overlook Scenic Backway toward Little Cedar Mountain in BLM VRM Class III lands

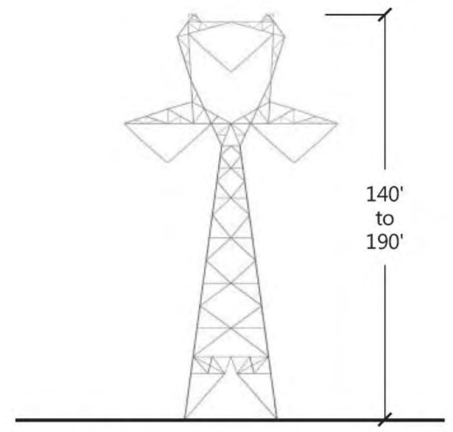


View Location: Approximate distance to proposed transmission line from photo location is 1.4 miles.



Simulated Condition – View of Alternatives COUT BAX-B and COUT BAX-C

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

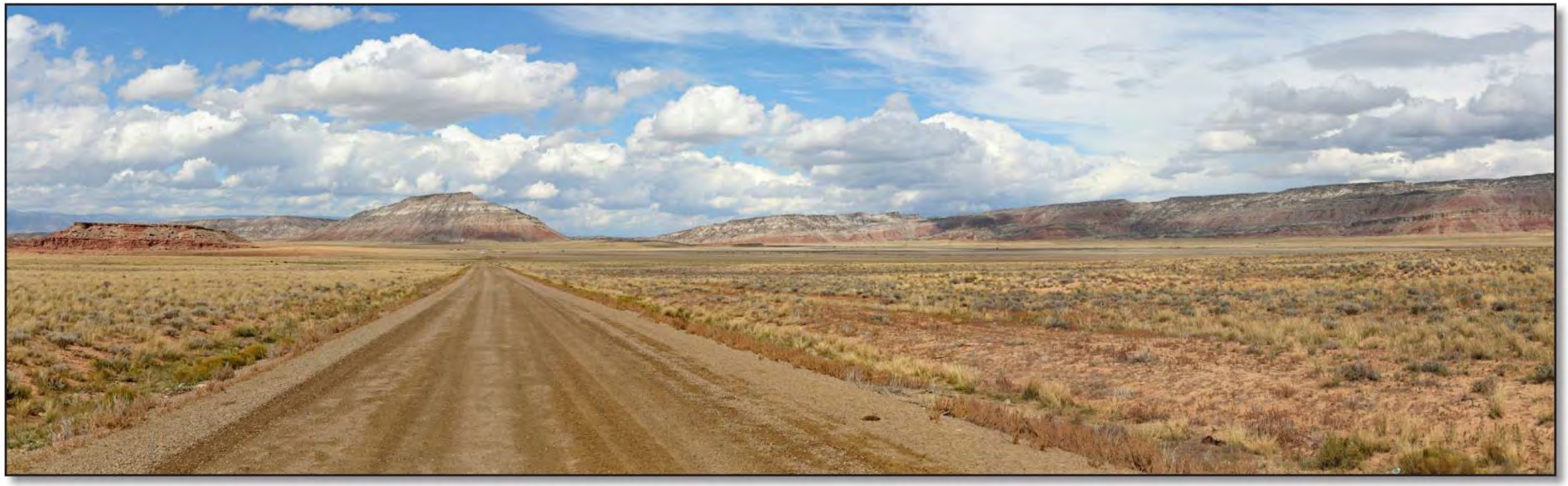
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

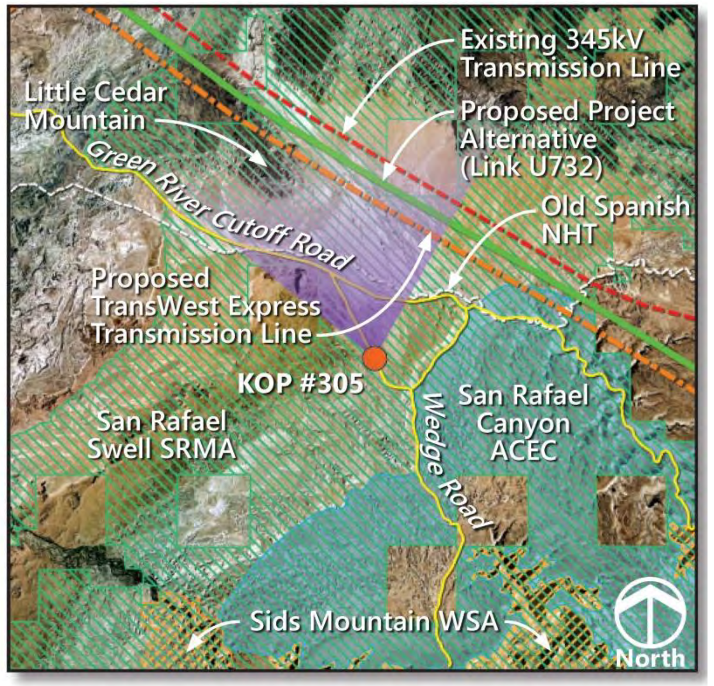
KOP #305 – Wedge Overlook Scenic Backway

Photo Date and Time: October 4, 2011, 1:44 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in an 81-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

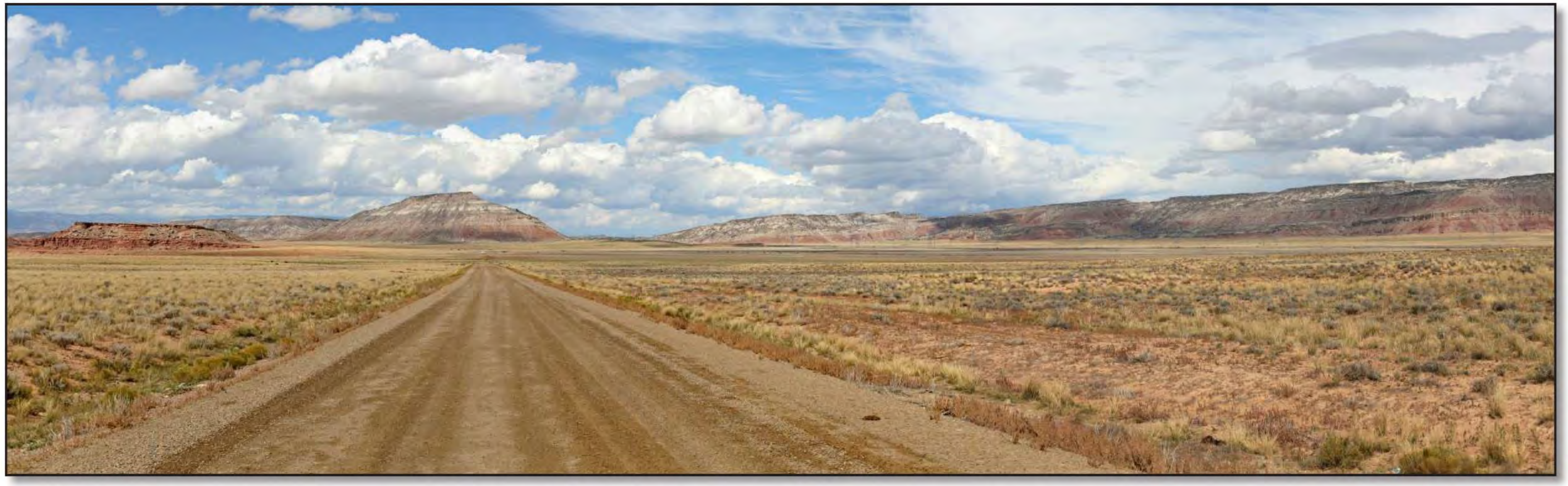
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking north from the Wedge Overlook Scenic Backway toward Little Cedar Mountain in BLM VRM Class III lands

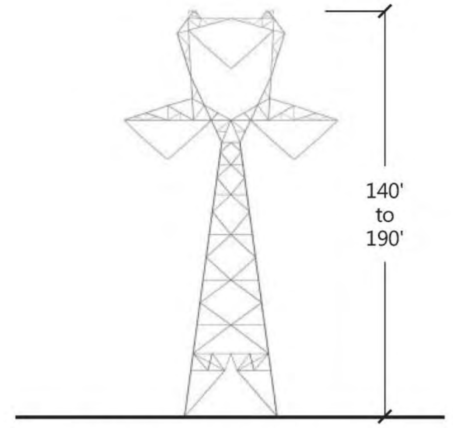


View Location: Approximate distance to proposed transmission line from photo location is 1.4 miles.



Simulated Condition – View of Alternatives COUT BAX-B and COUT BAX-C, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: October 4, 2011, 1:44 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in an 81-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

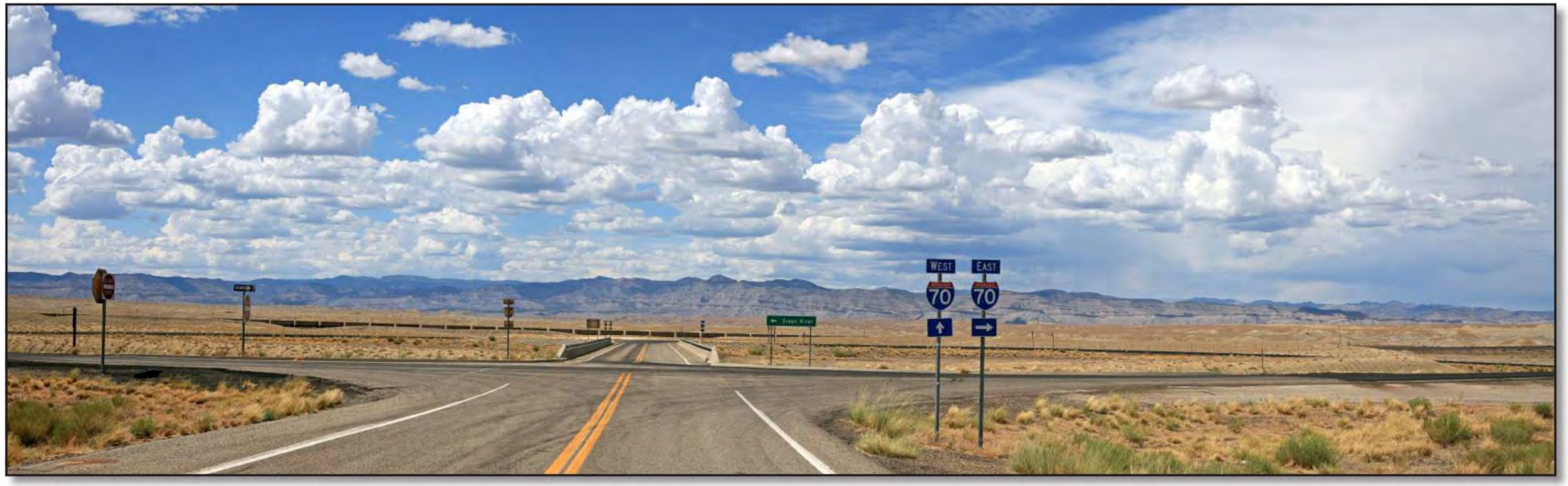
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

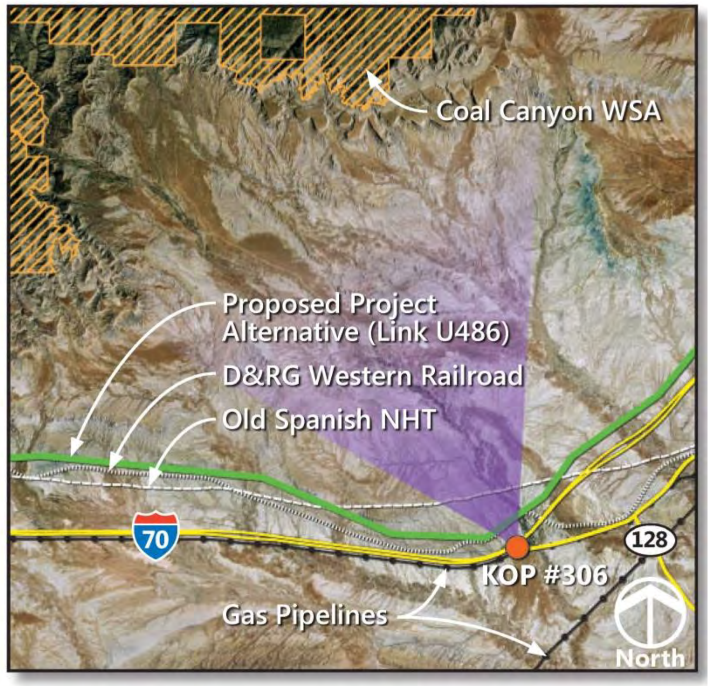
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #305 – Wedge Overlook Scenic Backway Cumulative Effects

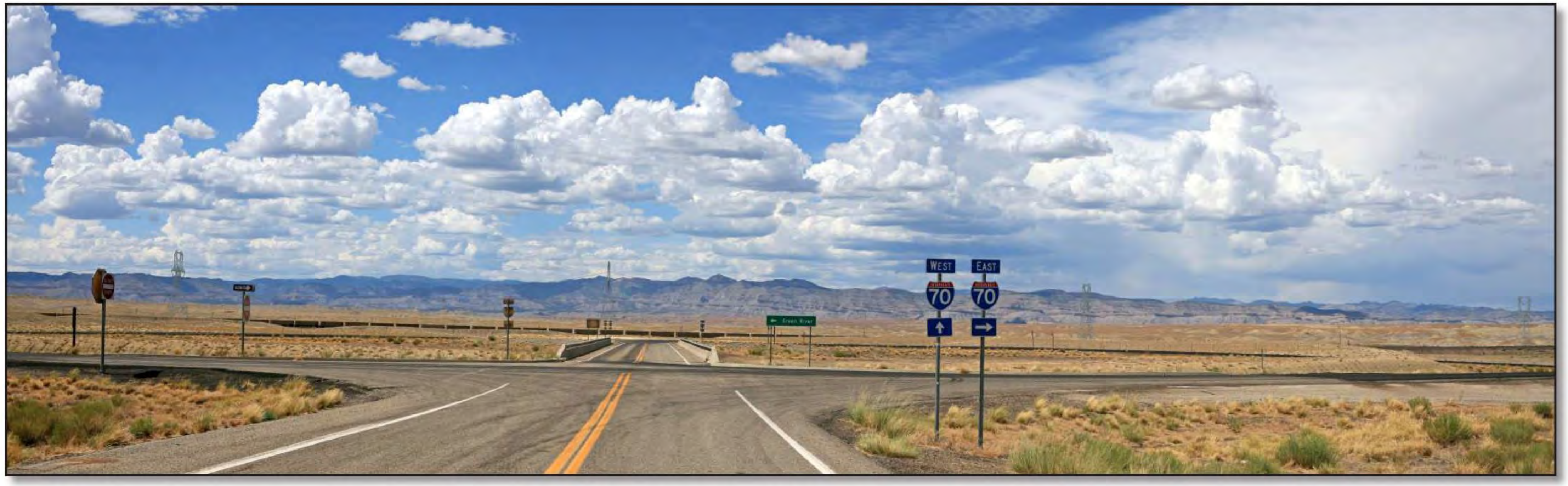
September 2015



Existing Condition – View looking northwest from the Upper Colorado Scenic Byway toward Interstate 70, an existing railroad, and BLM VRM Class II and III lands

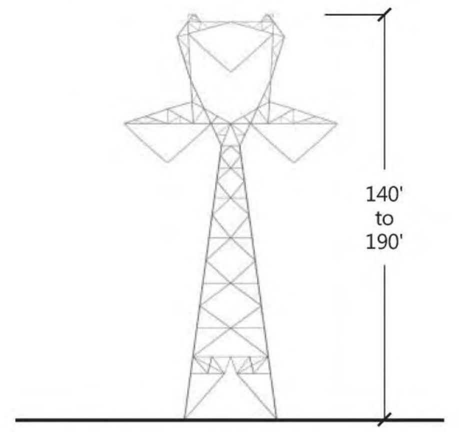


View Location: Approximate distance to proposed transmission line from photo location is 0.6 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

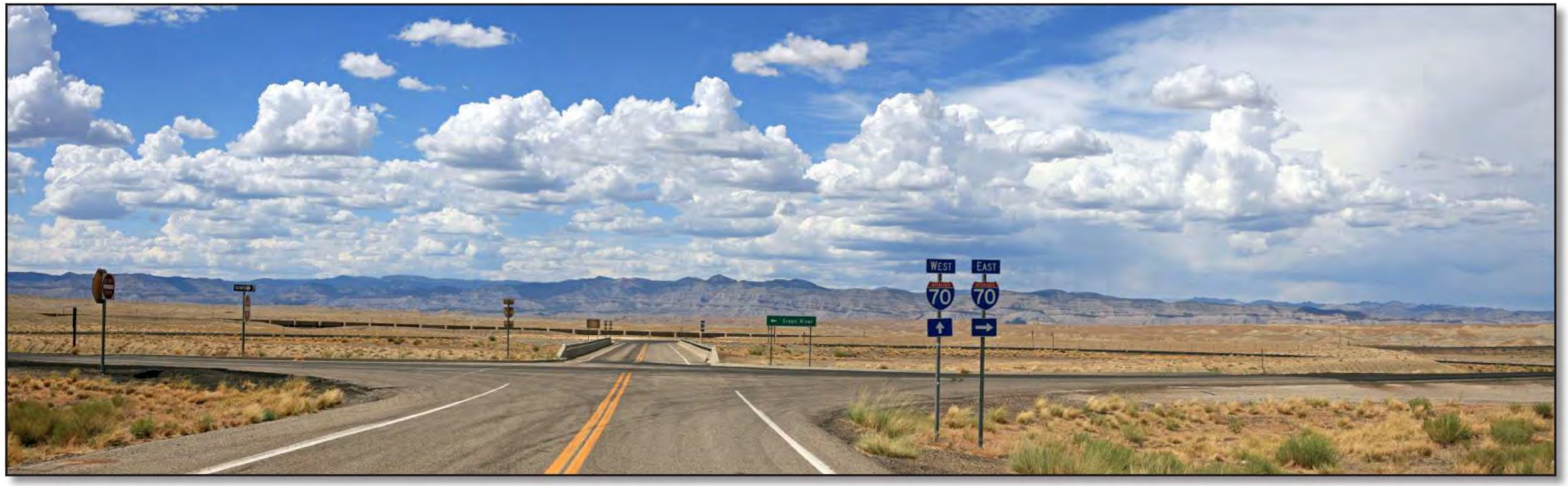
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

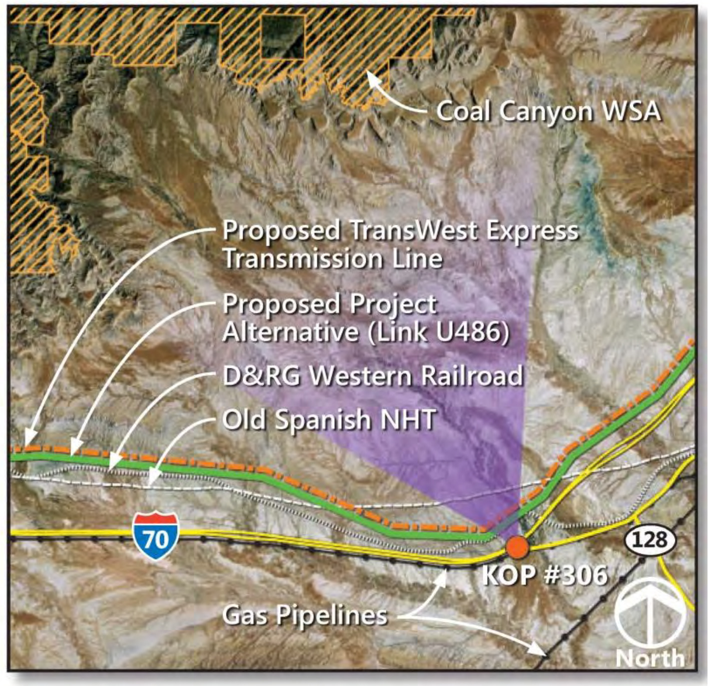
KOP #306 – Upper Colorado River Scenic Byway

Photo Date and Time: July 23, 2012, 2:35 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 63-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

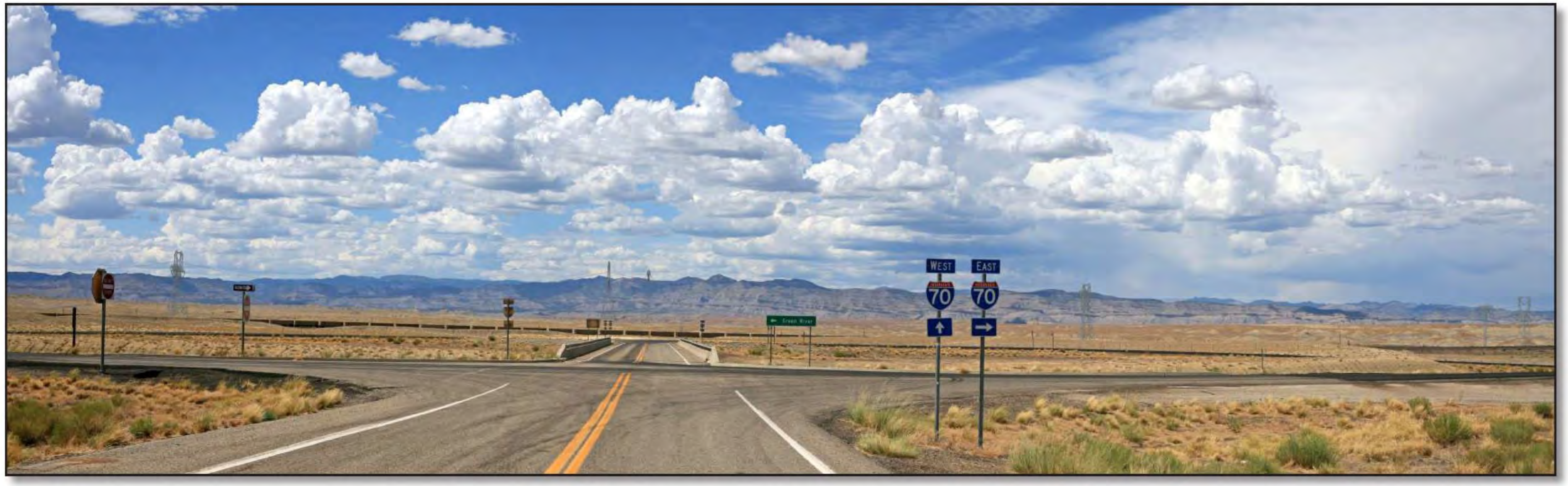
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking northwest from the Upper Colorado Scenic Byway toward Interstate 70, an existing railroad, and BLM VRM Class II and III lands

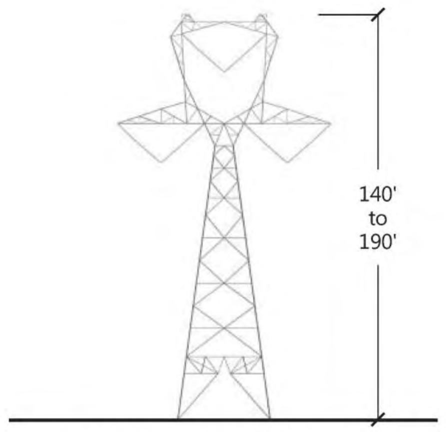

Coal Canyon WSA
Proposed TransWest Express Transmission Line
Proposed Project Alternative (Link U486)
D&RG Western Railroad
Old Spanish NHT
70
128
KOP #306
Gas Pipelines
North

View Location: Approximate distance to proposed transmission line from photo location is 0.6 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 2:35 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 63-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

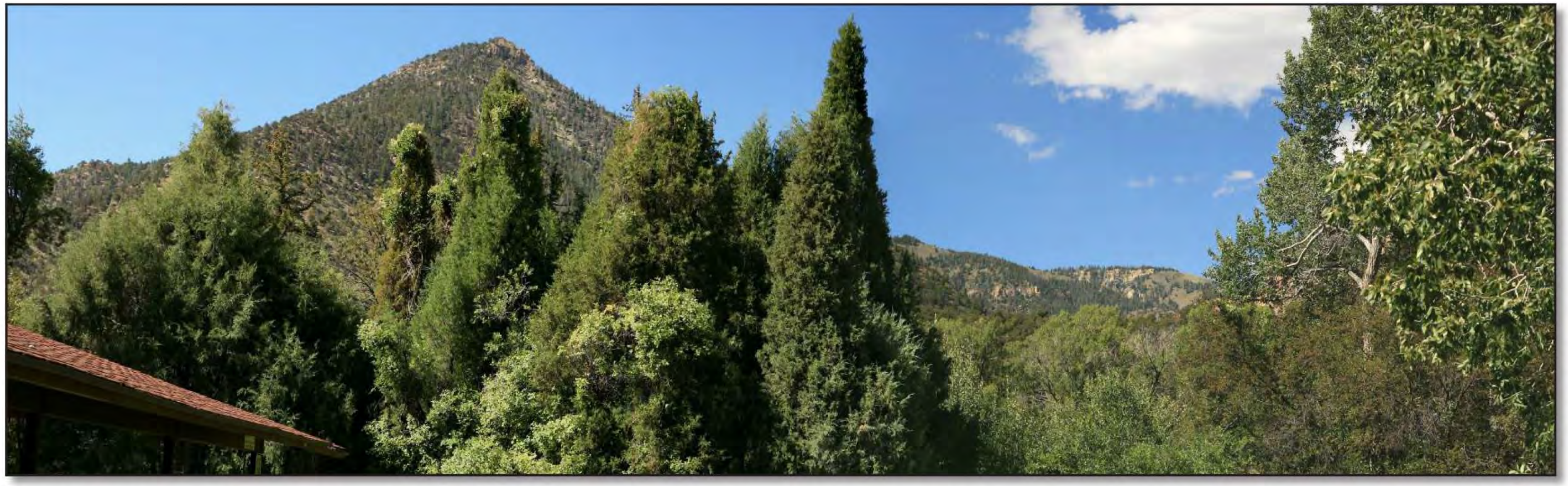
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

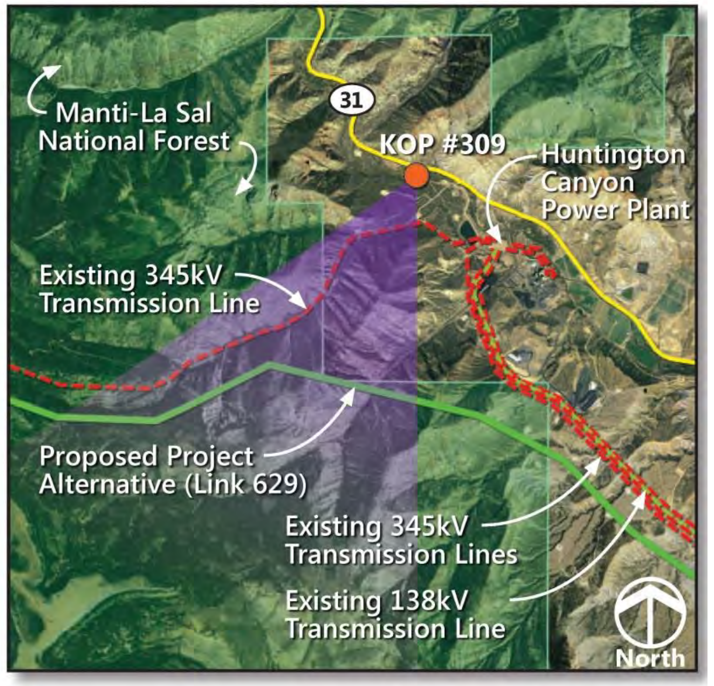
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #306 – Upper Colorado River Scenic Byway Cumulative Effects

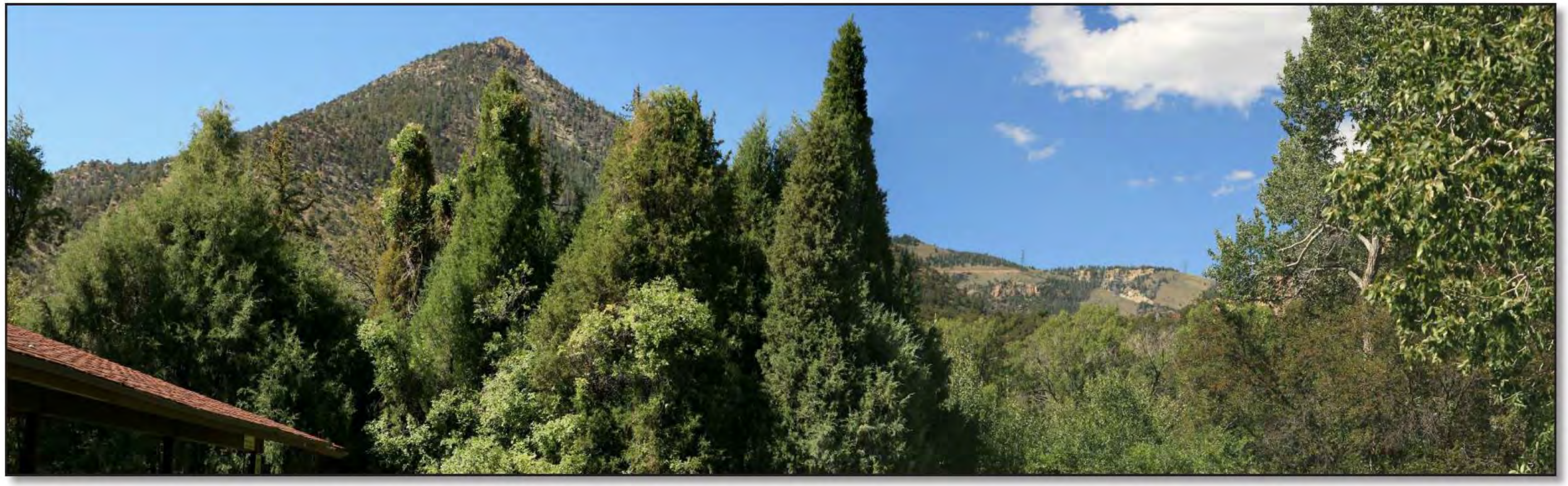
September 2015



Existing Condition – View looking southwest from Bear Creek Campground, near the Huntington Canyon Power Plant (not visible), toward an existing 345kV transmission line (not visible), and the Manti-La Sal National Forest

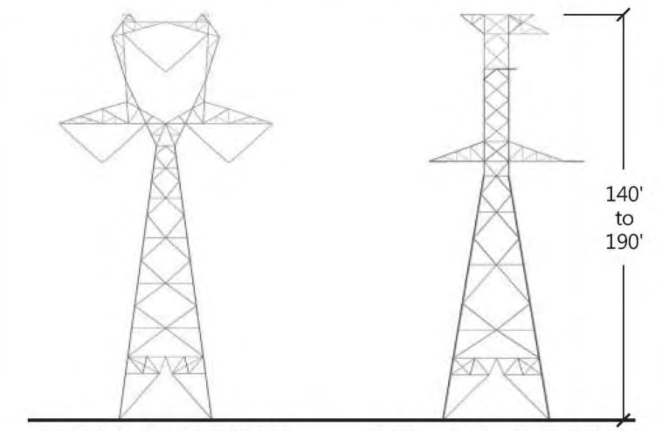

Manti-La Sal National Forest
31
KOP #309
Huntington Canyon Power Plant
Existing 345kV Transmission Line
Proposed Project Alternative (Link 629)
Existing 345kV Transmission Lines
Existing 138kV Transmission Line
North

View Location: Approximate distance to proposed transmission line from photo location is 2 miles.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT-I

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

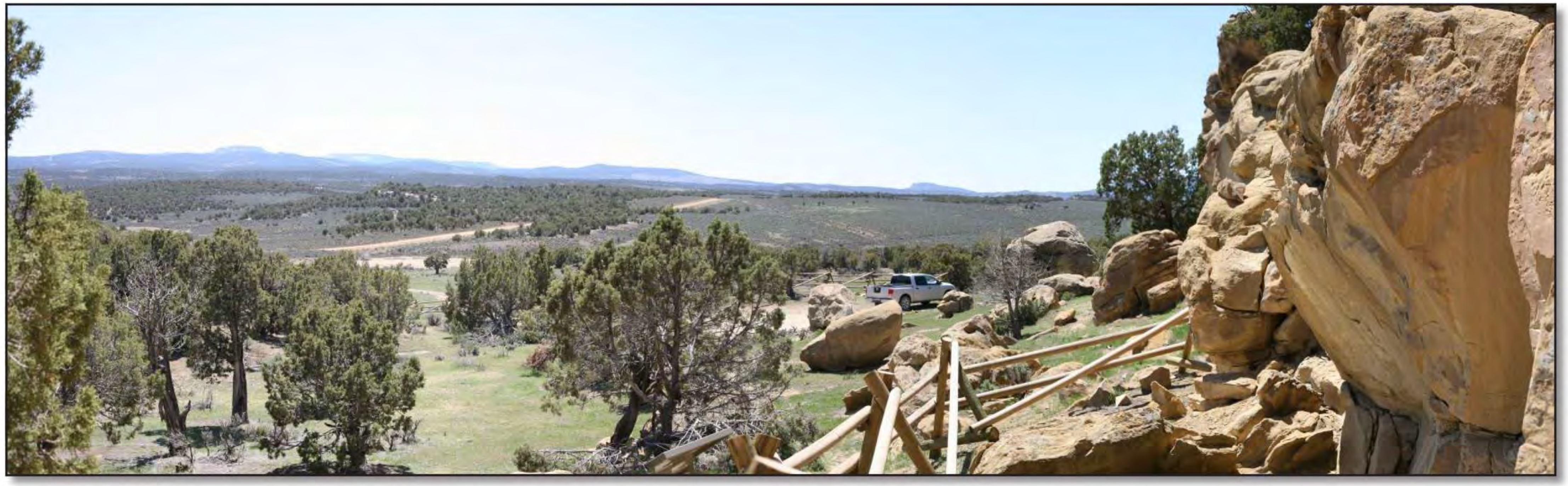
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #309 – Bear Creek Campground

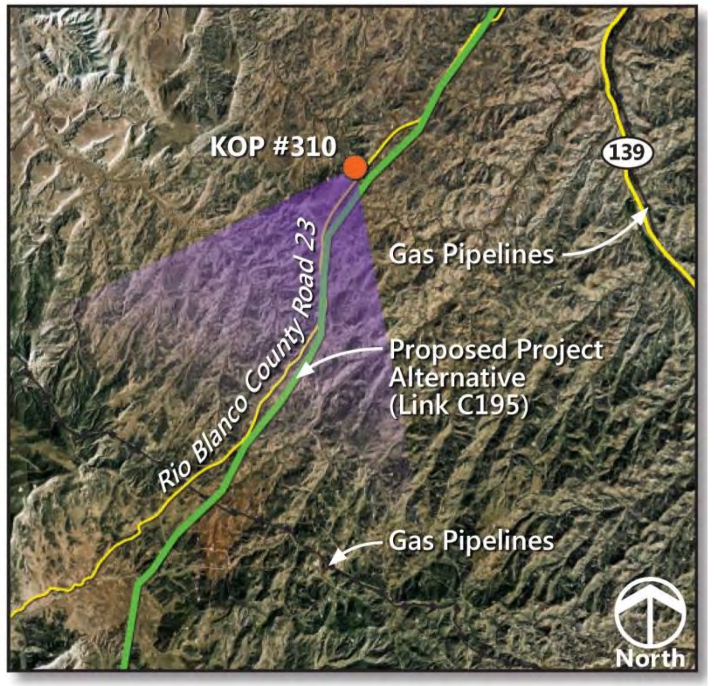
Photo Date and Time: July 26, 2012, 9:57 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 56-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

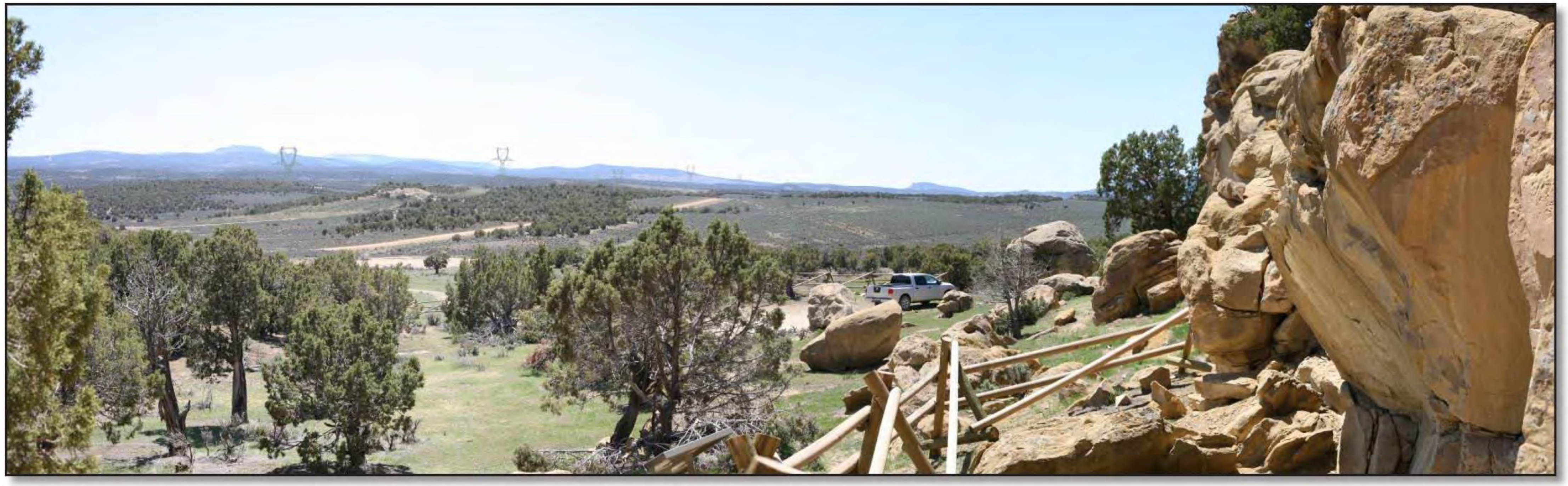
September 2015



Existing Condition – View looking southwest from the Crook's Brand Rock Art Site toward BLM VRM Class IV lands

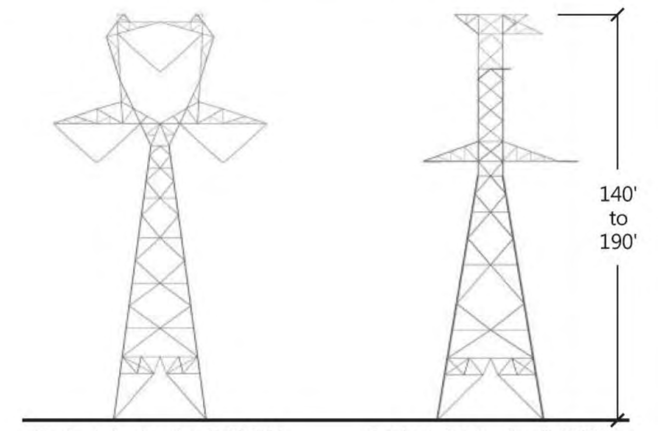

KOP #310
139
Gas Pipelines
Rio Blanco County Road 23
Proposed Project Alternative (Link C195)
Gas Pipelines
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

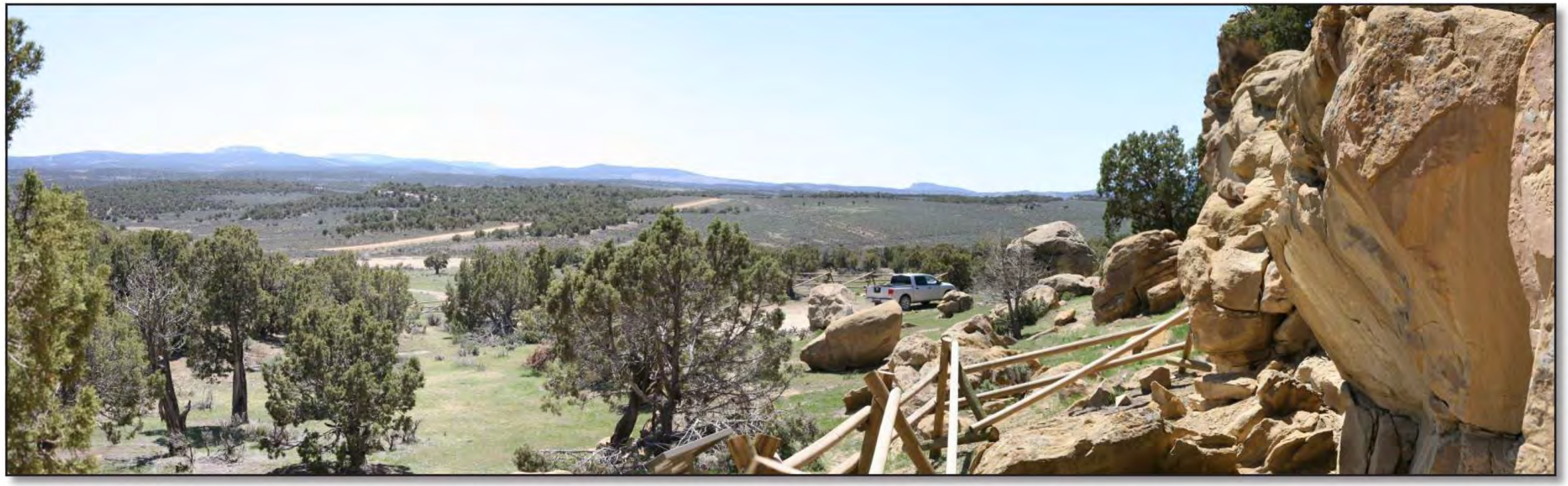
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #310 – Crook's Brand Rock Art Site

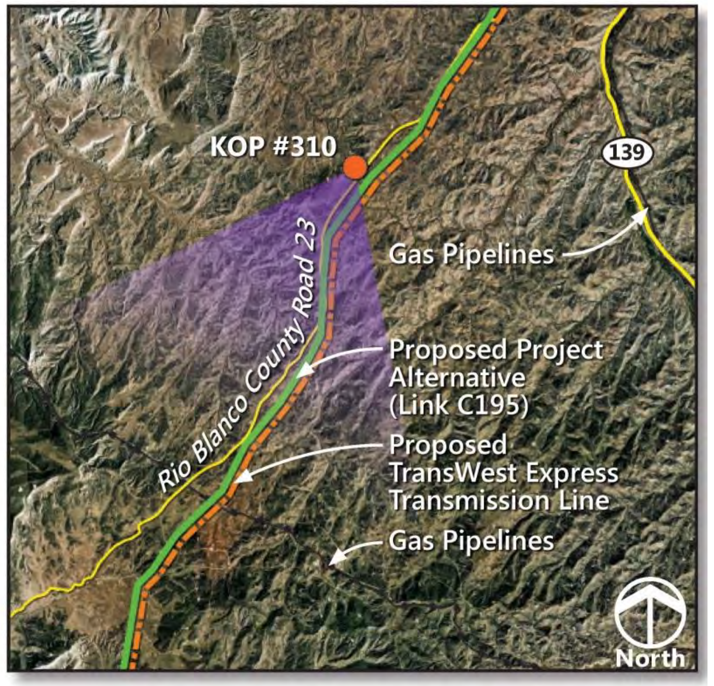
Photo Date and Time: May 2, 2013, 1:26 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 69-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

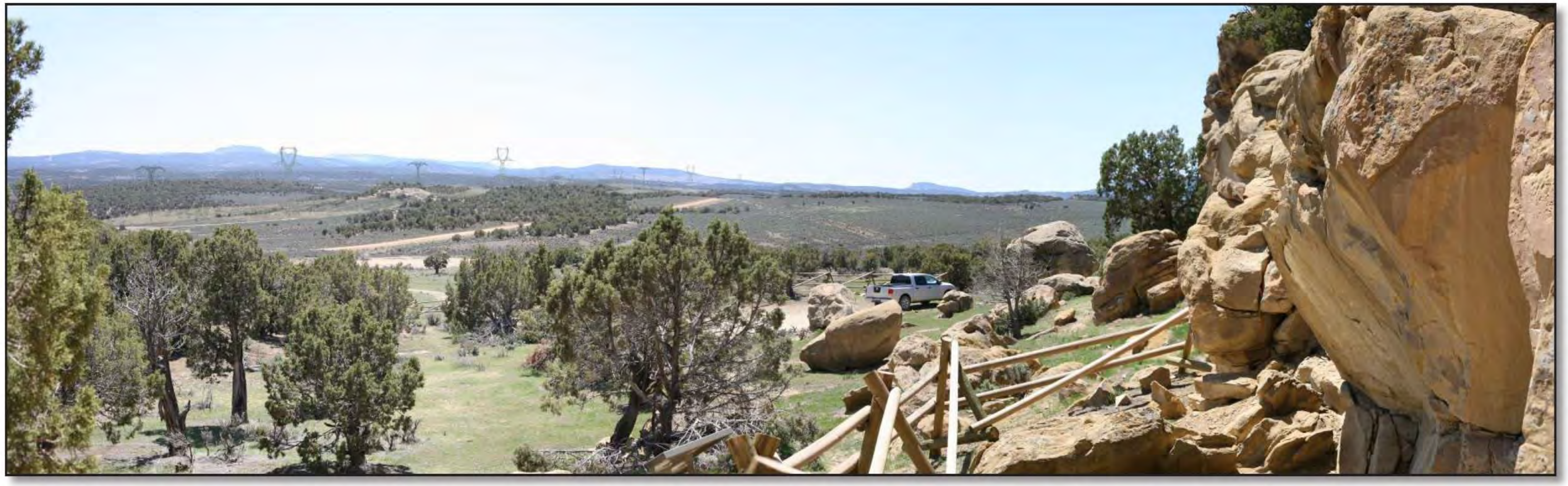
September 2015



Existing Condition – View looking southwest from the Crook's Brand Rock Art Site toward BLM VRM Class IV lands

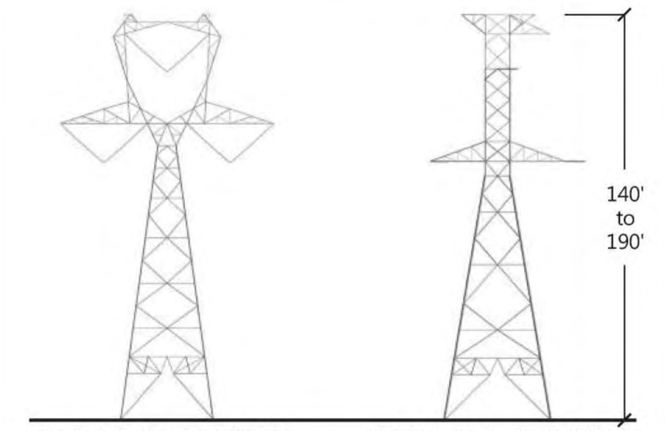

KOP #310
139
Gas Pipelines
Rio Blanco County Road 23
Proposed Project Alternative (Link C195)
Proposed TransWest Express Transmission Line
Gas Pipelines
North

View Location: Approximate distance to proposed transmission line from photo location is 0.4 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: May 2, 2013, 1:26 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 69-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

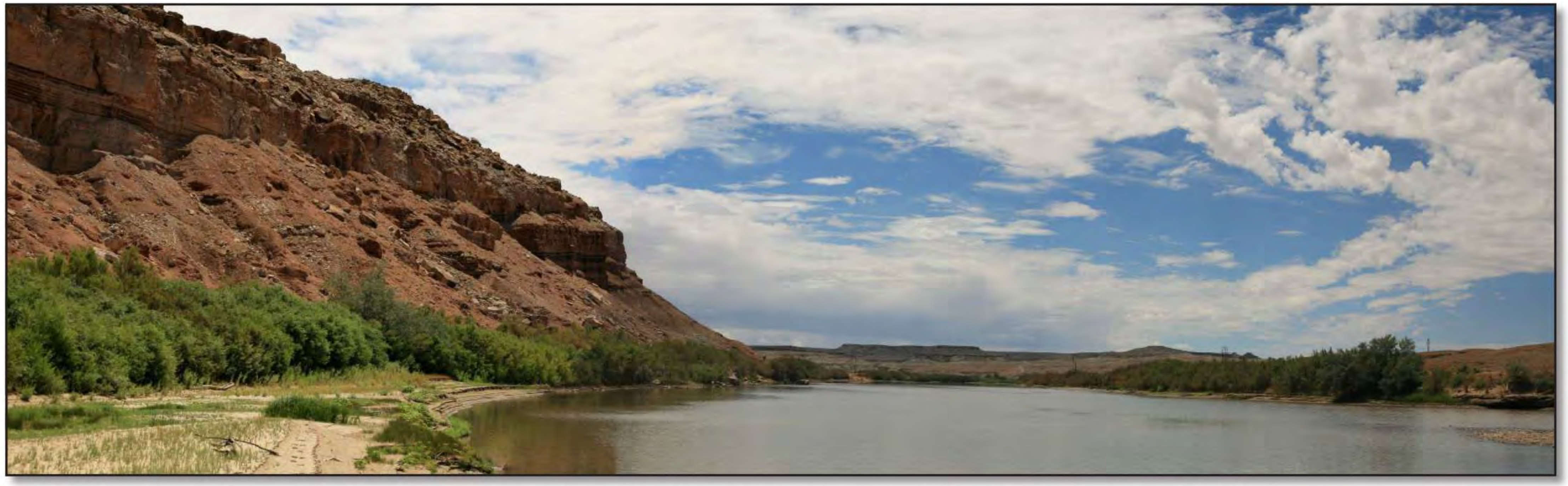
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

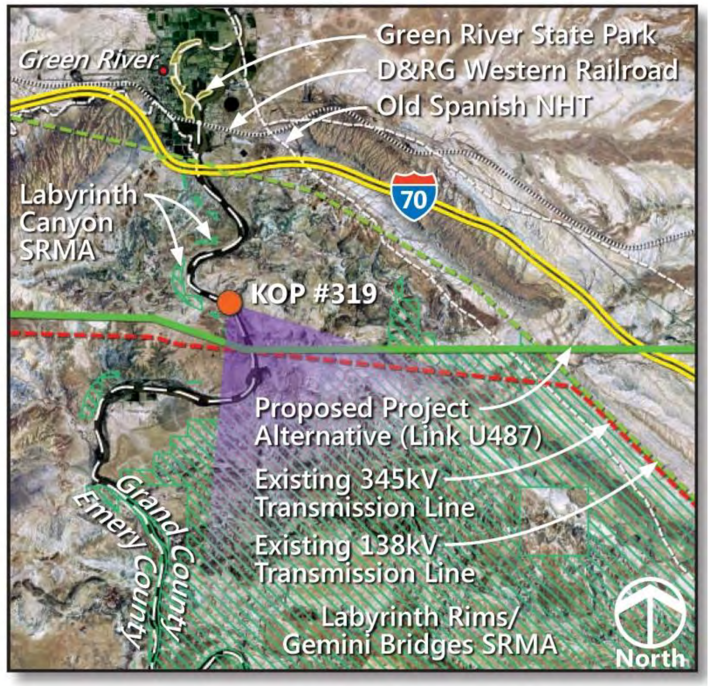
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #310 – Crook's Brand Rock Art Site Cumulative Effects

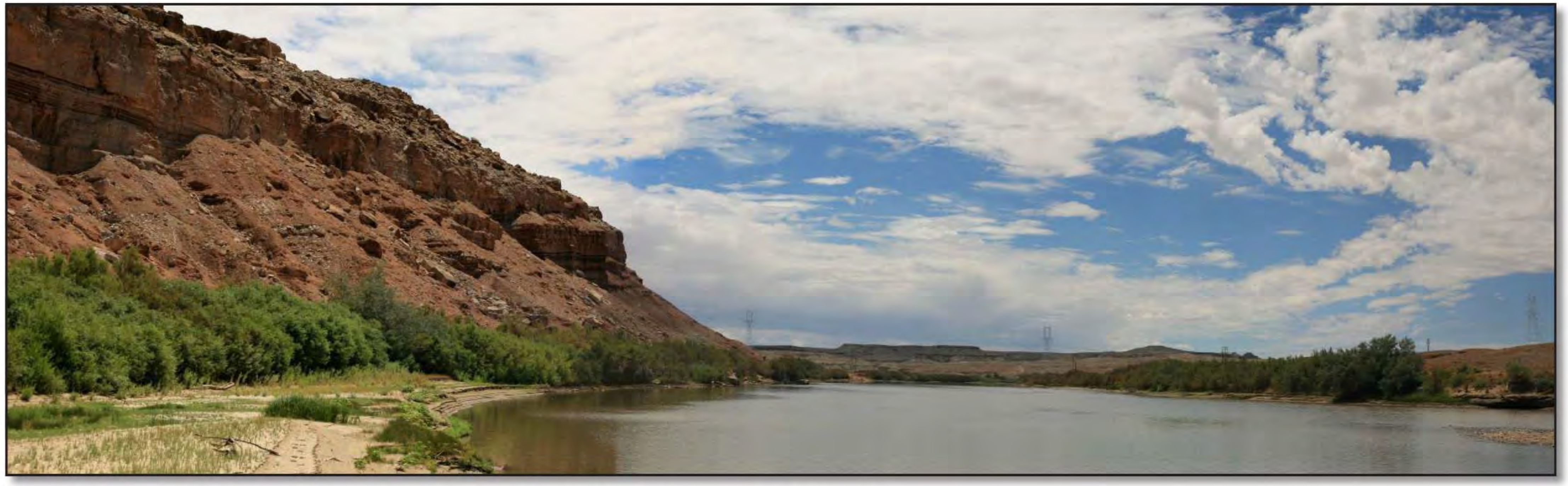
September 2015



Existing Condition – View looking southeast from Green River toward Crystal Geyser, Labyrinth Rims/Gemini Bridges SRMA, Labyrinth Canyon SRMA, an existing 345kV transmission line, and BLM VRM Class II and III lands

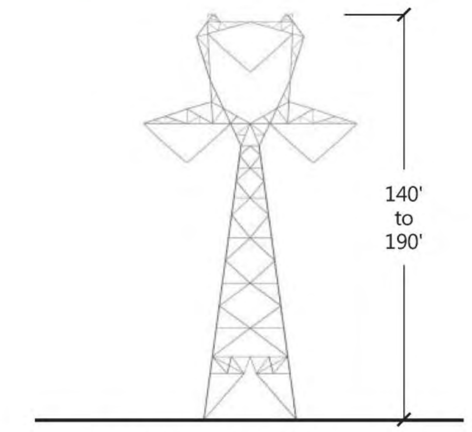

Green River
Green River State Park
D&RG Western Railroad
Old Spanish NHT
70
Labyrinth Canyon SRMA
KOP #319
Proposed Project Alternative (Link U487)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
Grand County
Emery County
Labyrinth Rims/ Gemini Bridges SRMA
North

View Location: Approximate distance to proposed transmission line from photo location is 0.7 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

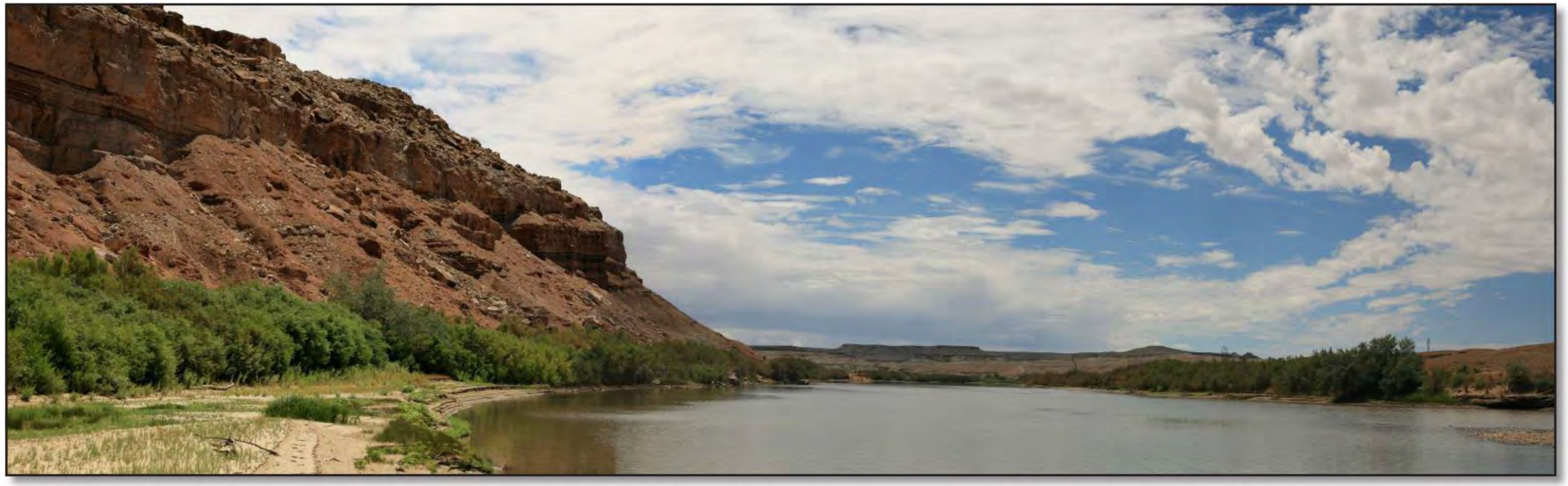
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

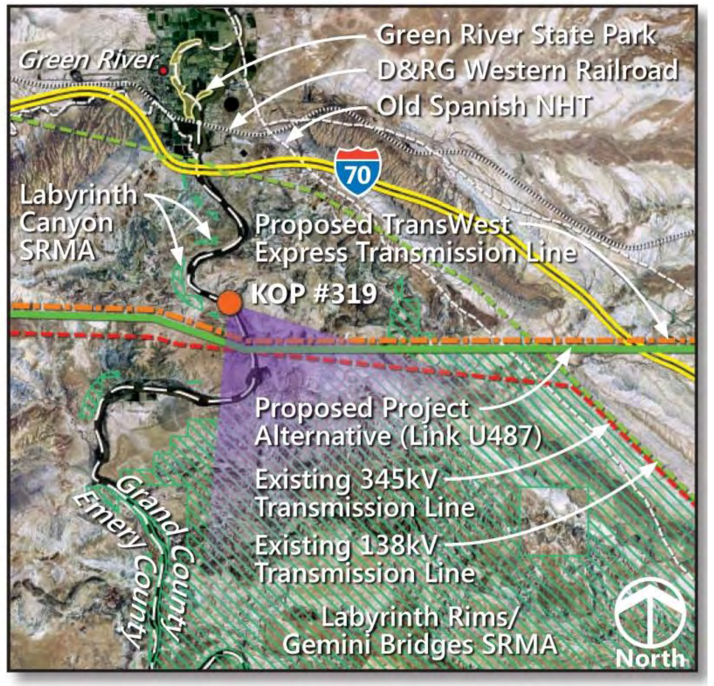
KOP #319 – Green River

Photo Date and Time: July 24, 2012, 11:49 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 76-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

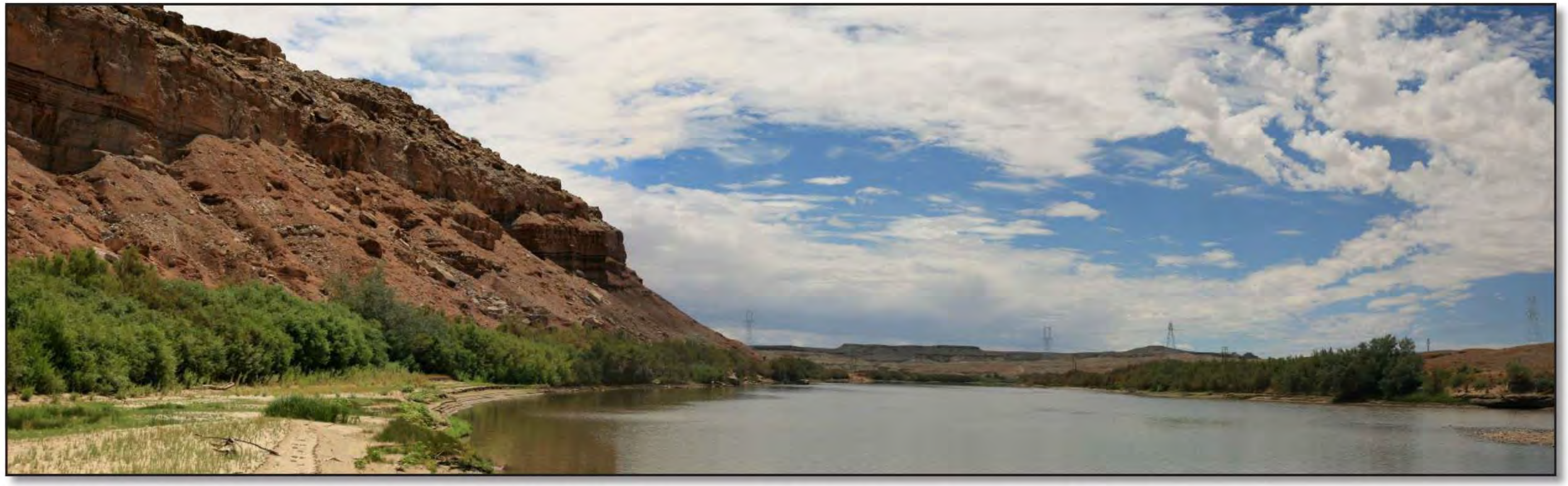
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking southeast from Green River toward Crystal Geyser, Labyrinth Rims/Gemini Bridges SRMA, Labyrinth Canyon SRMA, an existing 345kV transmission line, and BLM VRM Class II and III lands

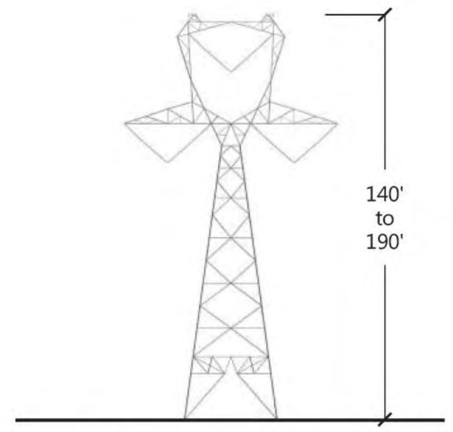

Green River
Green River State Park
D&RG Western Railroad
Old Spanish NHT
70
Labyrinth Canyon SRMA
Proposed TransWest Express Transmission Line
KOP #319
Proposed Project Alternative (Link U487)
Existing 345kV Transmission Line
Existing 138kV Transmission Line
Grand County
Emery County
Labyrinth Rims/ Gemini Bridges SRMA
North

View Location: Approximate distance to proposed transmission line from photo location is 0.7 mile.



Simulated Condition – View of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 24, 2012, 11:49 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 76-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

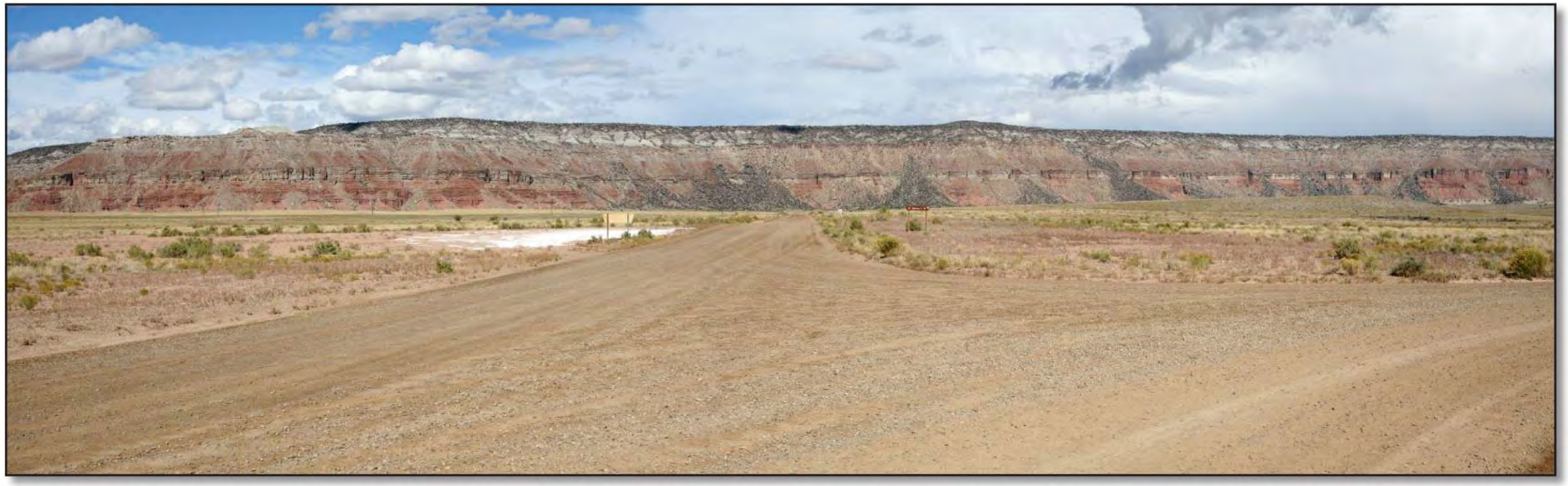
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

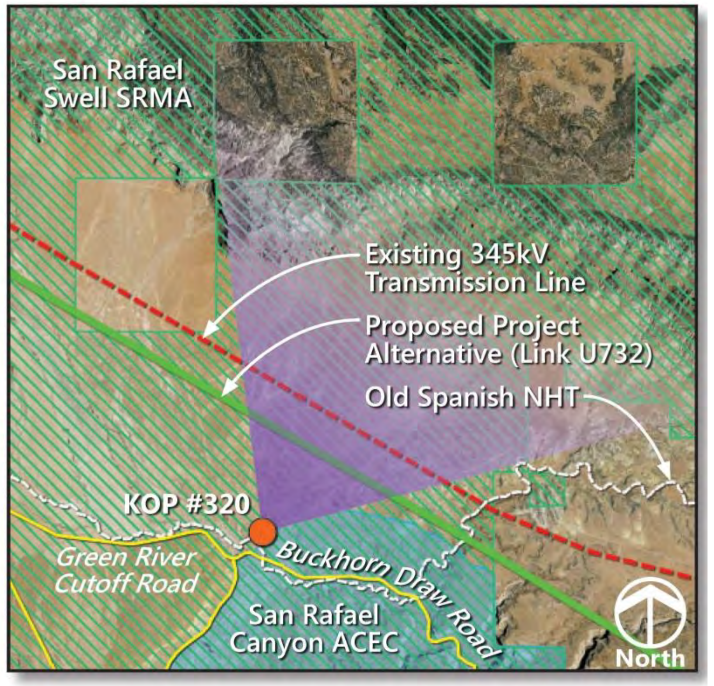
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #319 – Green River Cumulative Effects

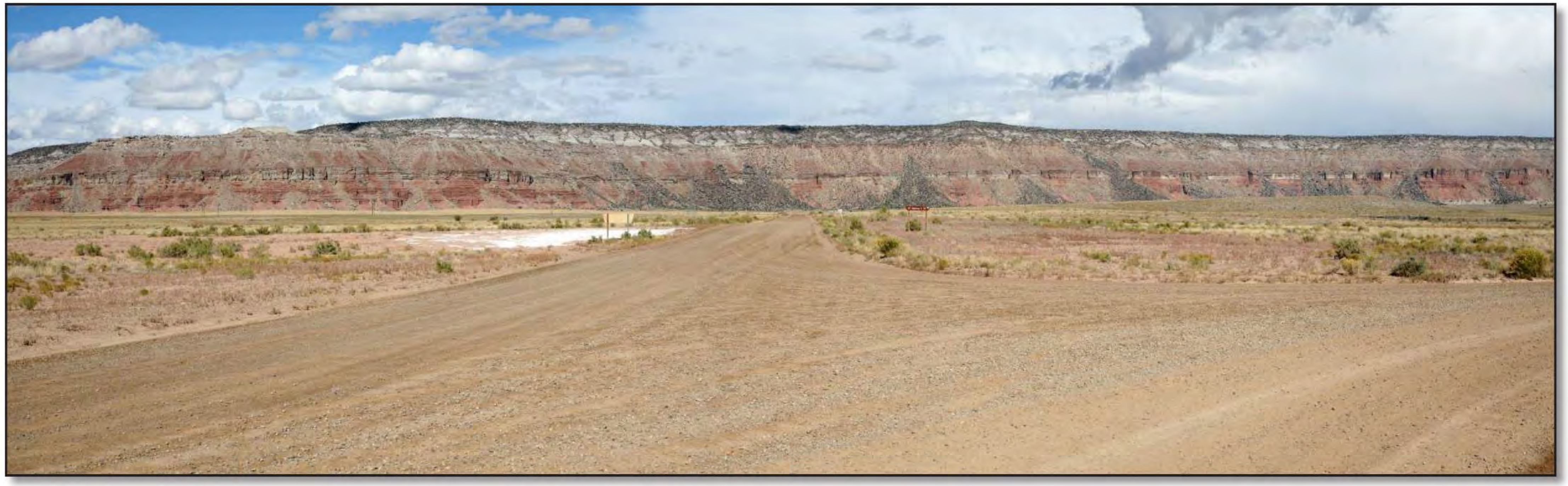
September 2015



Existing Condition – View looking northeast from Green River Cutoff Road at the intersection of the Buckhorn Draw Scenic Backway, toward an existing 345kV transmission line and BLM VRM Class III lands

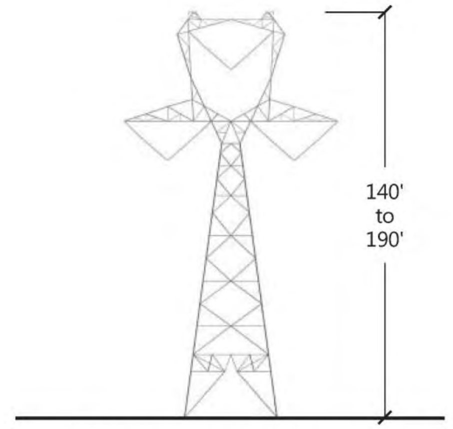


View Location: Approximate distance to proposed transmission line from photo location is 0.7 mile.



Simulated Condition – View of Alternative COUT BAX-B and COUT BAX-C

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

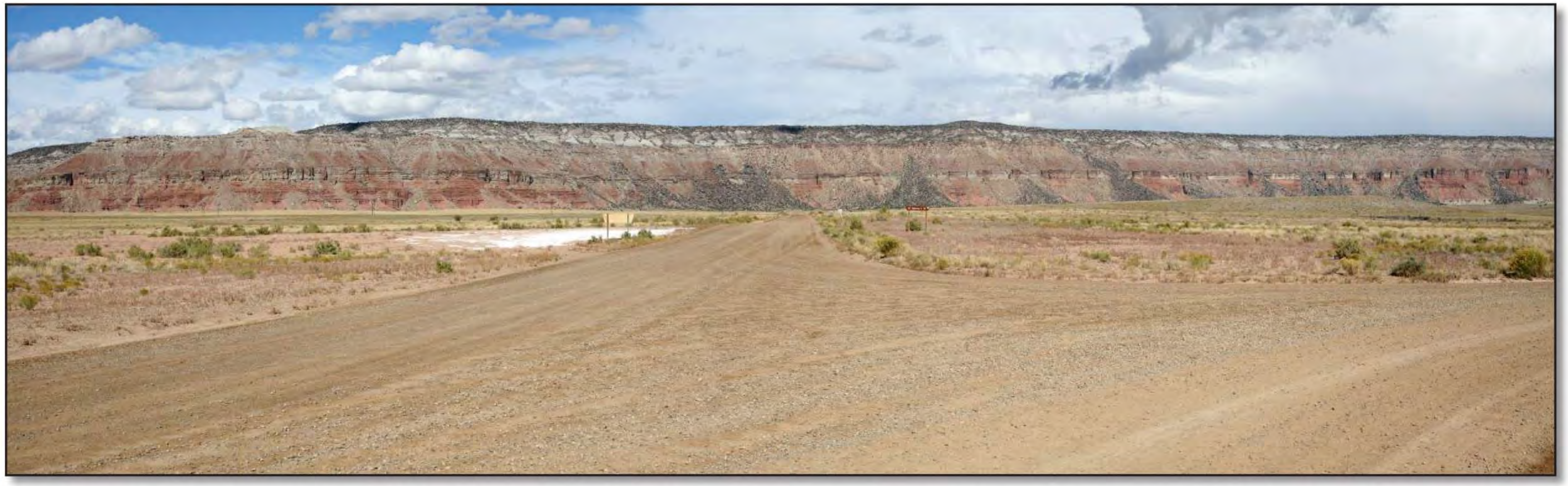
Photo Date and Time: October 4, 2011, 2:44 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 83-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

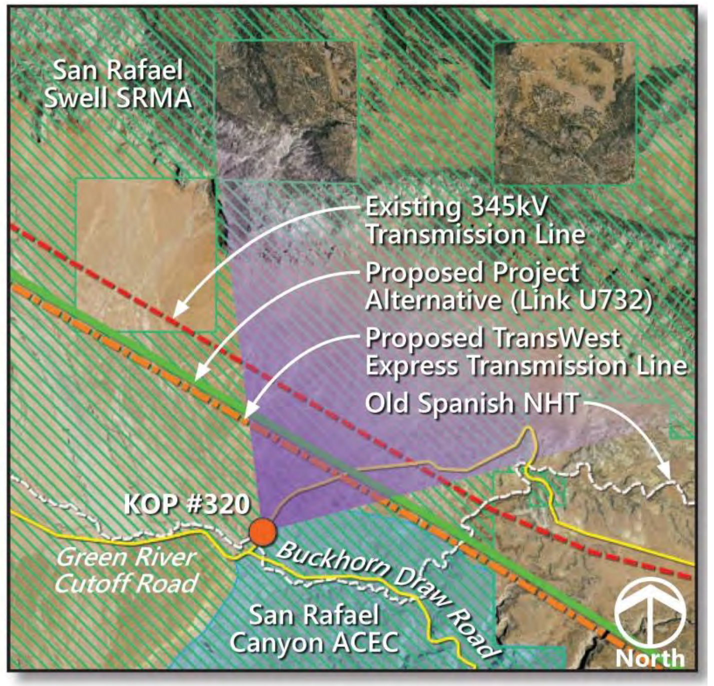
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #320 – Junction of Road to Buckhorn Wash

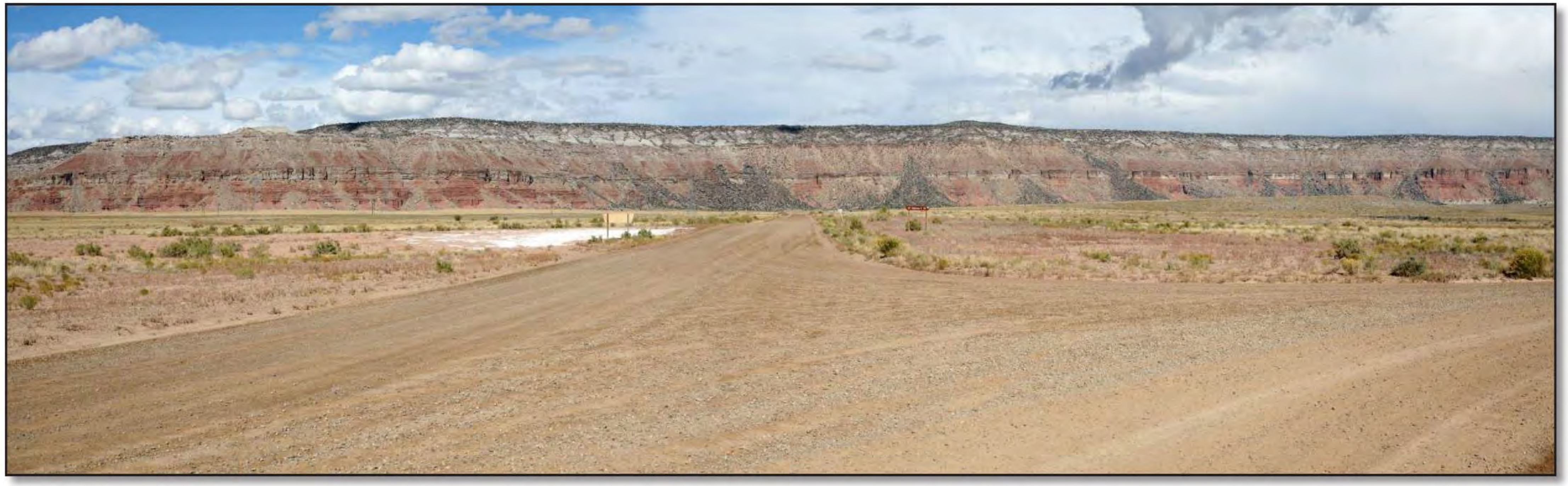
September 2015



Existing Condition – View looking northeast from Green River Cutoff Road at the intersection of the Buckhorn Draw Scenic Backway, toward an existing 345kV transmission line and BLM VRM Class III lands

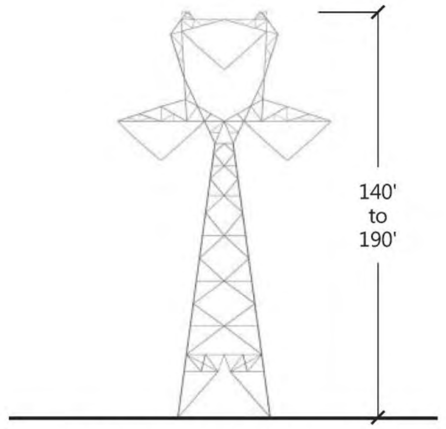

San Rafael Swell SRMA
Existing 345kV Transmission Line
Proposed Project Alternative (Link U732)
Proposed TransWest Express Transmission Line
Old Spanish NHT
KOP #320
Green River Cutoff Road
Buckhorn Draw Road
San Rafael Canyon ACEC
North

View Location: Approximate distance to proposed transmission line from photo location is 0.7 mile.



Simulated Condition – View of Alternative COUT BAX-B and COUT BAX-C and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: October 4, 2011, 2:44 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 83-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

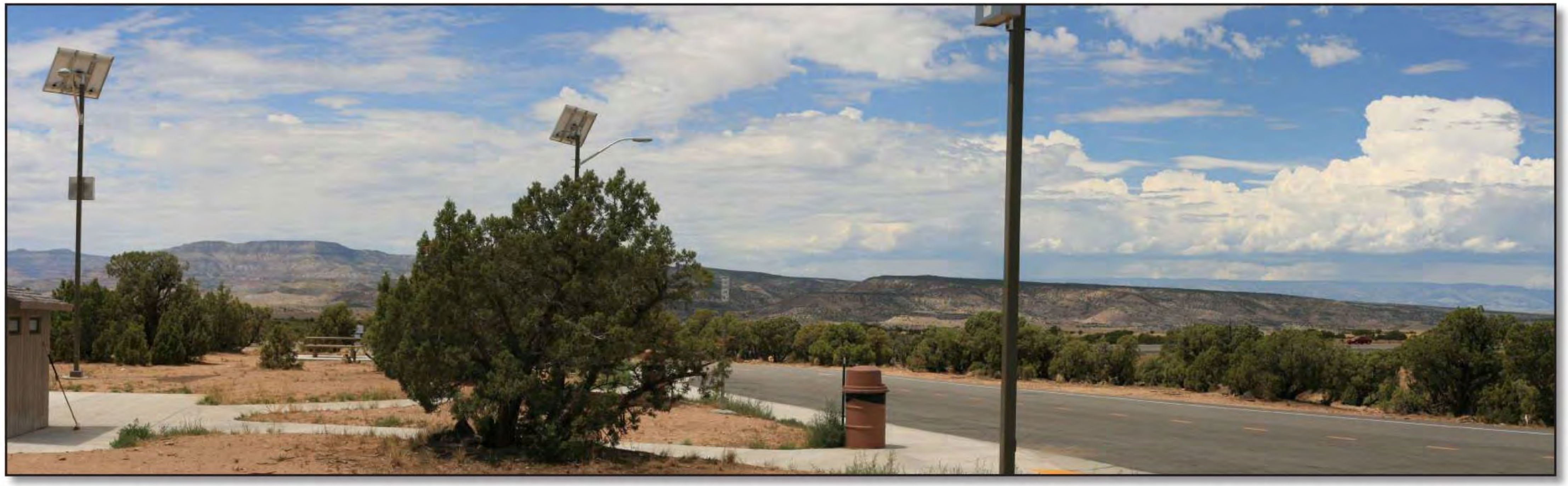
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

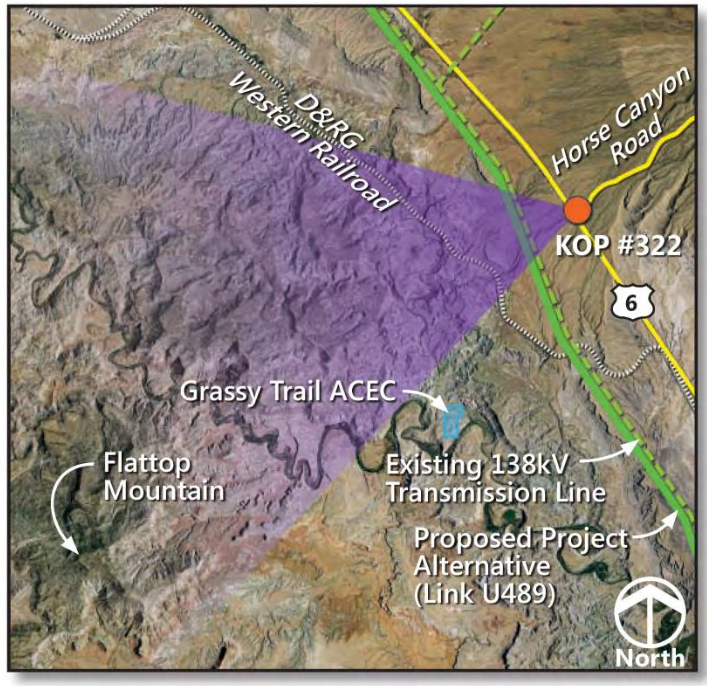
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #320 – Junction of Road to Buckhorn Wash Cumulative Effects

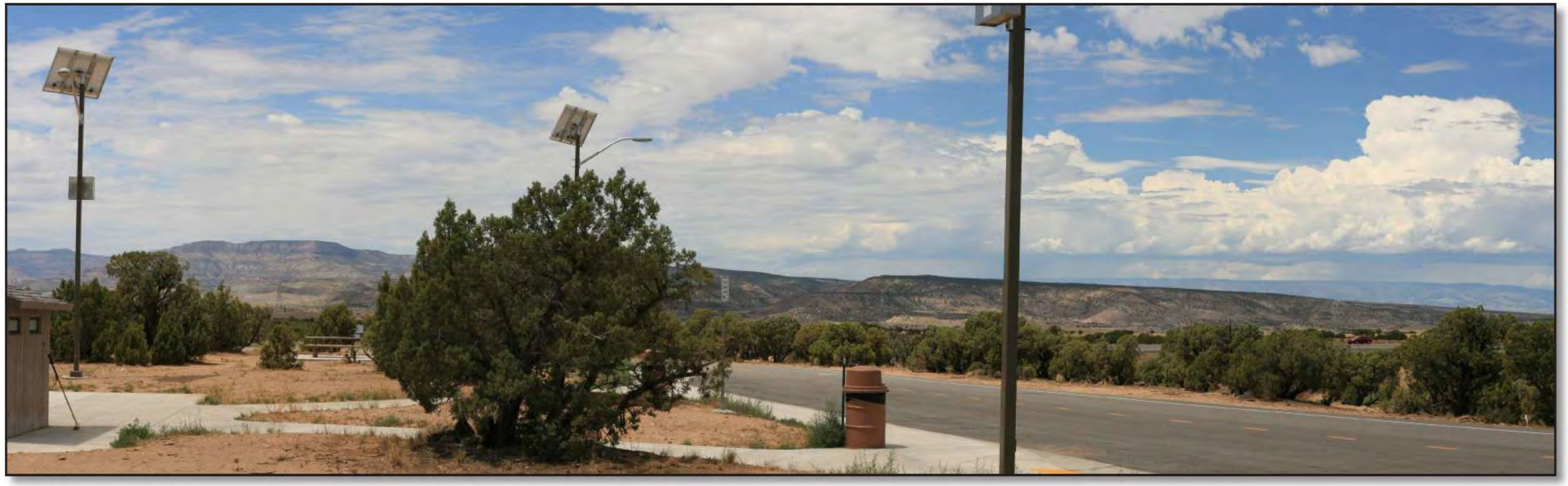
September 2015



Existing Condition – View looking west from the Horse Canyon Rest Area east of U.S. Highway 6 toward an existing 138kV transmission line and BLM VRM Class III and IV lands

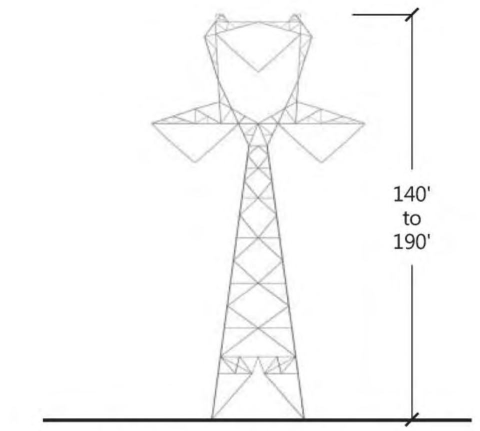


View Location: Approximate distance to proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternative COUT BAX-E

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized
self-supporting lattice tangent transmission tower

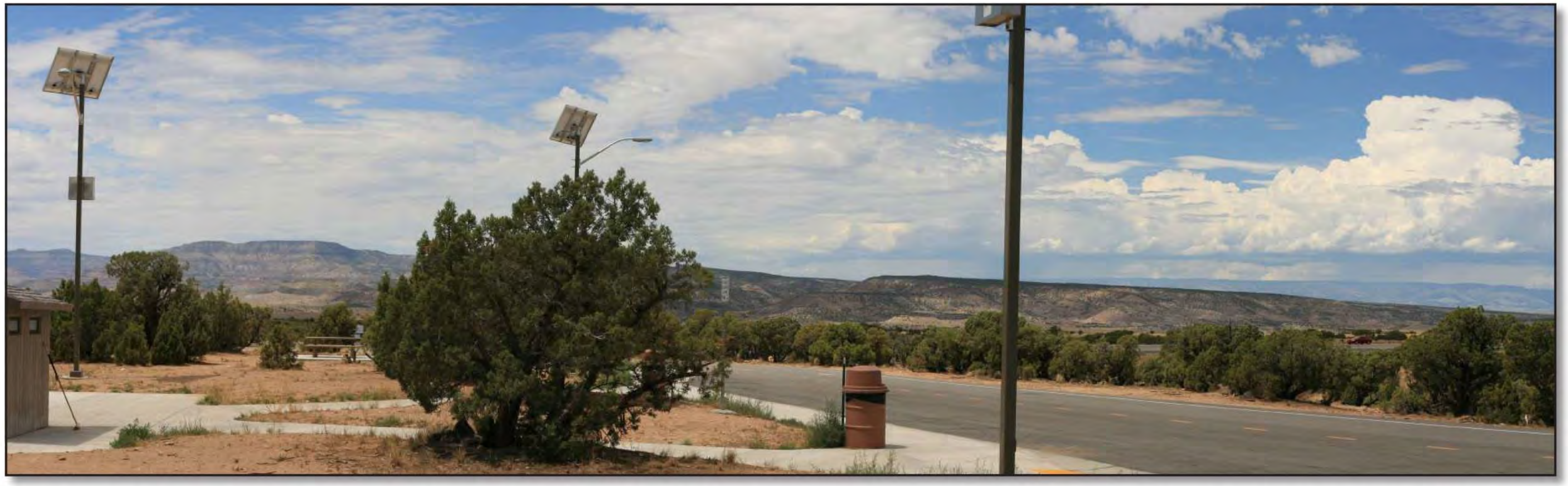
Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 11:54 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

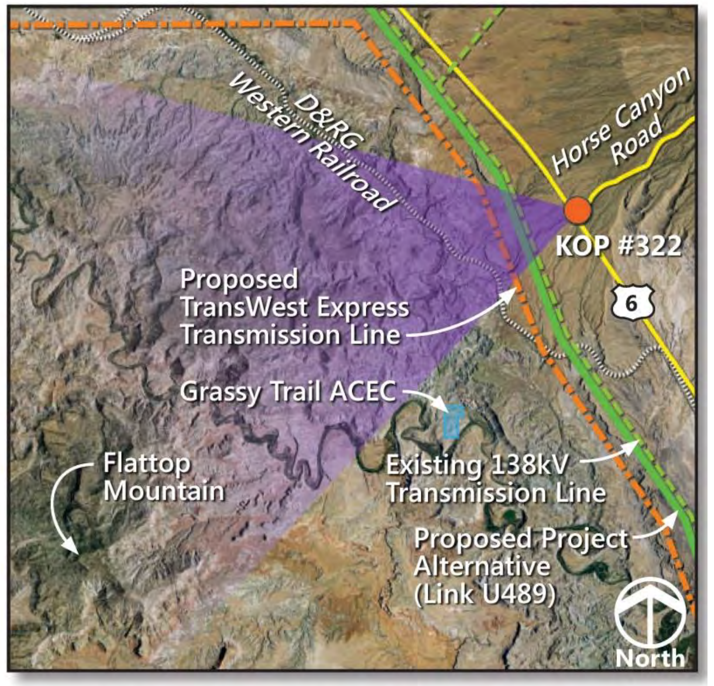
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #322 – U.S. Highway 6 Rest Area

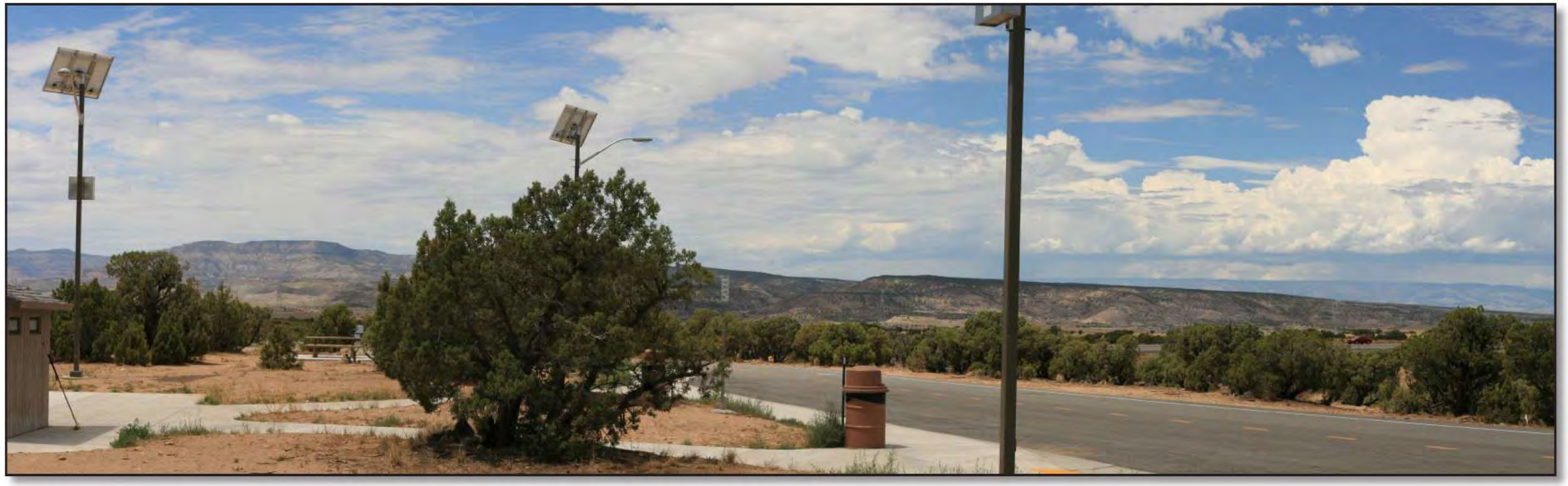


Existing Condition – View looking west from the Horse Canyon Rest Area east of U.S. Highway 6 toward an existing 138kV transmission line and BLM VRM Class III and IV lands



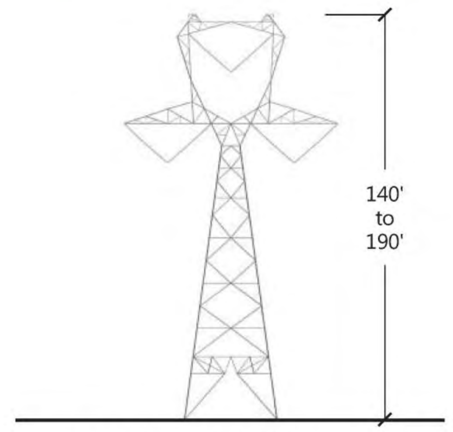
D&RG Western Railroad
Horse Canyon Road
KOP #322
6
Proposed TransWest Express Transmission Line
Grassy Trail ACEC
Flattop Mountain
Existing 138kV Transmission Line
Proposed Project Alternative (Link U489)
North

View Location: Approximate distance to proposed transmission line from photo location is 1.0 mile.



Simulated Condition – View of Alternative COUT BAX-E and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: July 23, 2012, 11:54 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 59-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

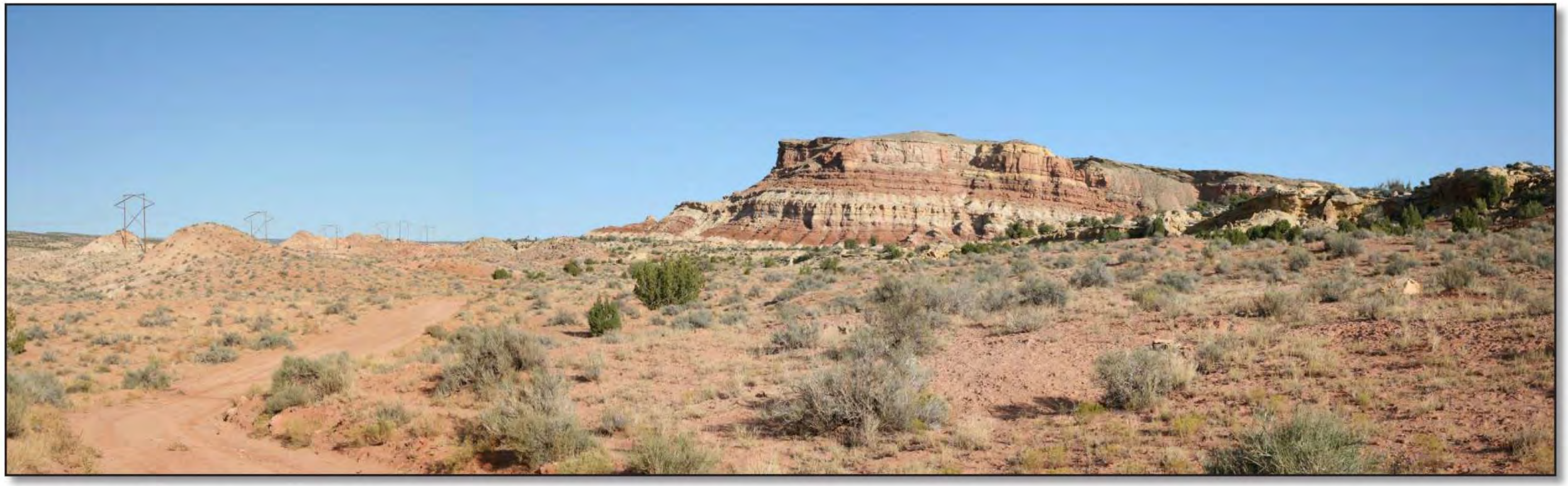
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

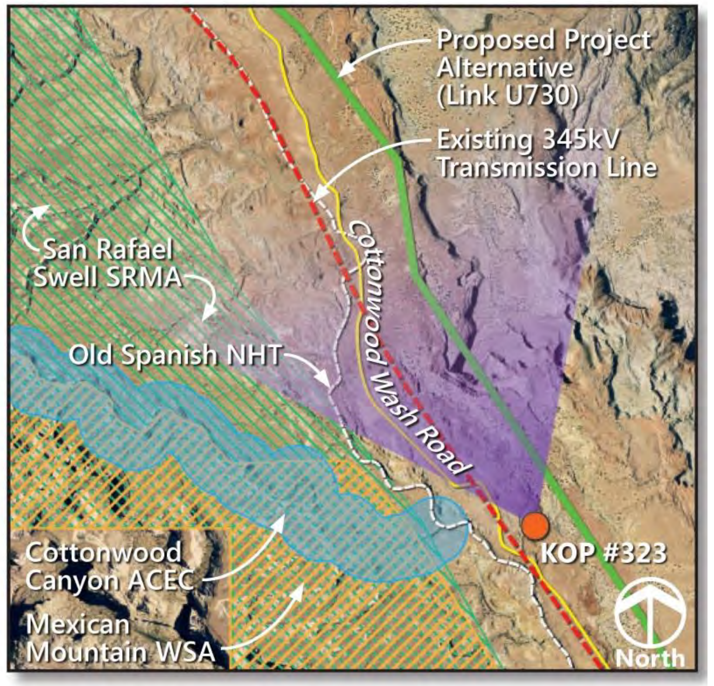
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #322 – U.S. Highway 6 Rest Area Cumulative Effects

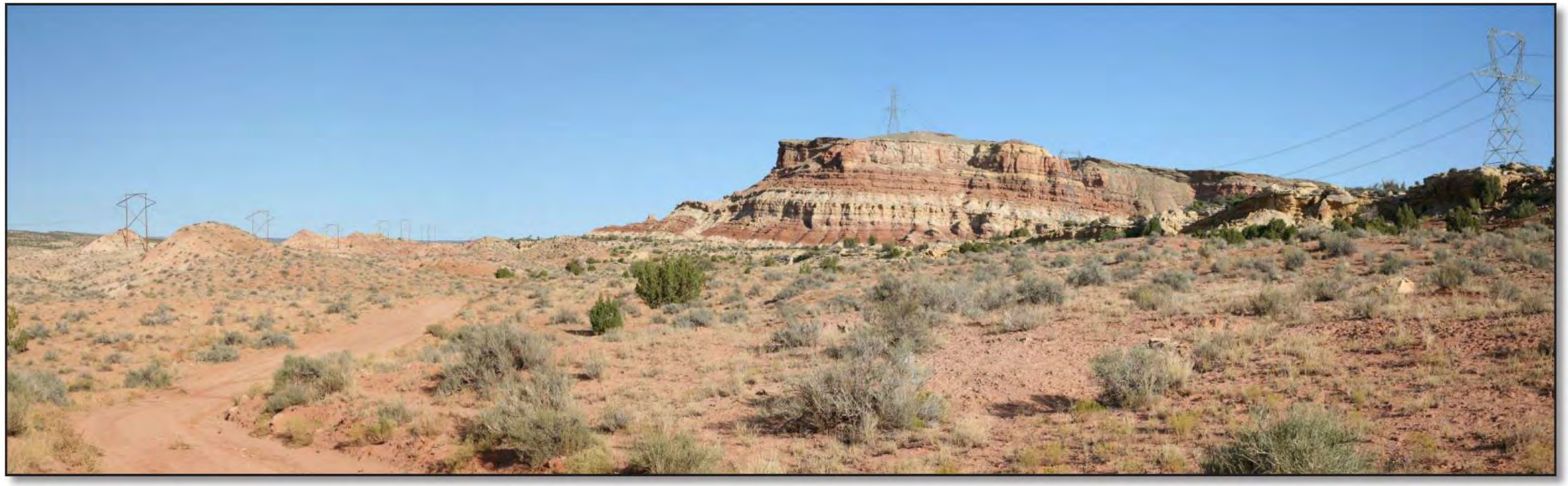
September 2015



Existing Condition – View looking northwest from Cottonwood Wash Road (Old Railroad Grade) toward an existing 345kV transmission line in BLM Class III lands

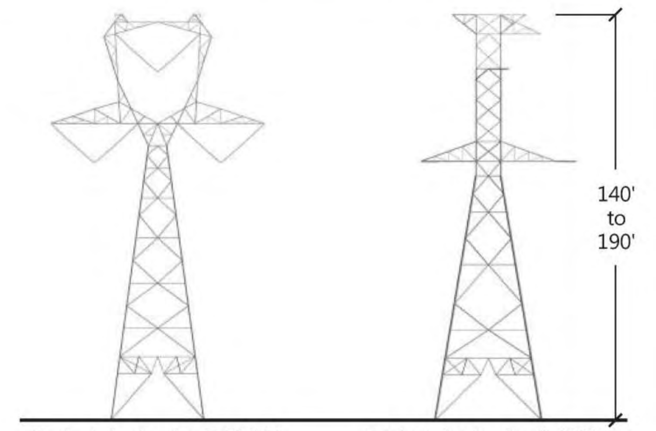


View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative COUT BAX-B

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice deadend transmission tower

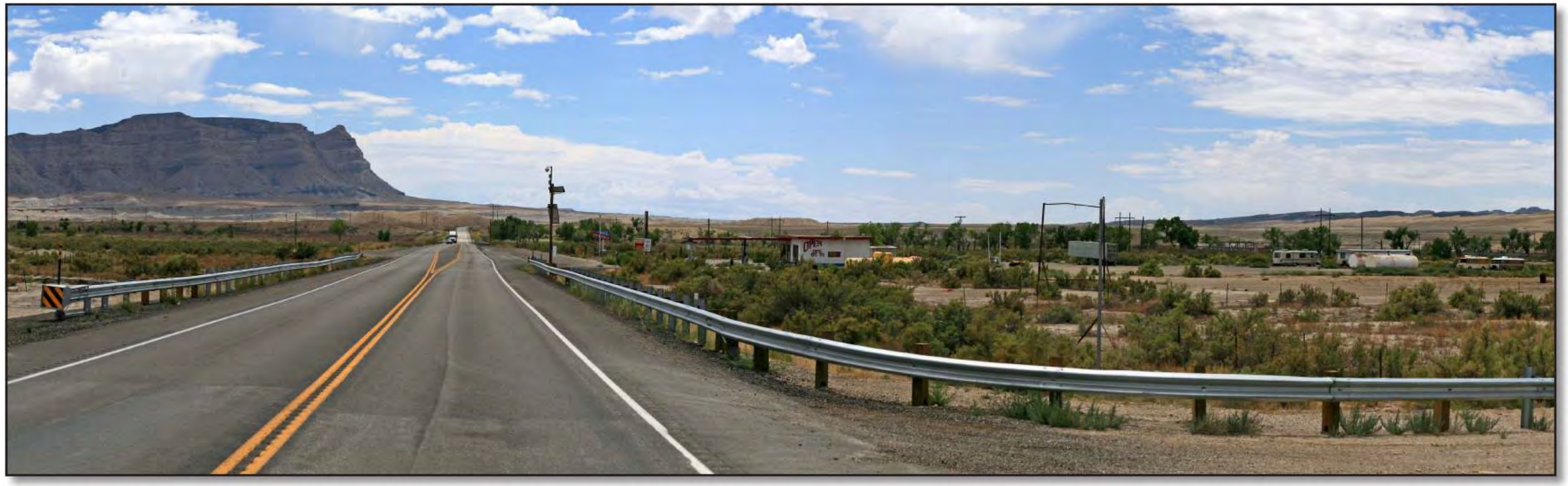
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

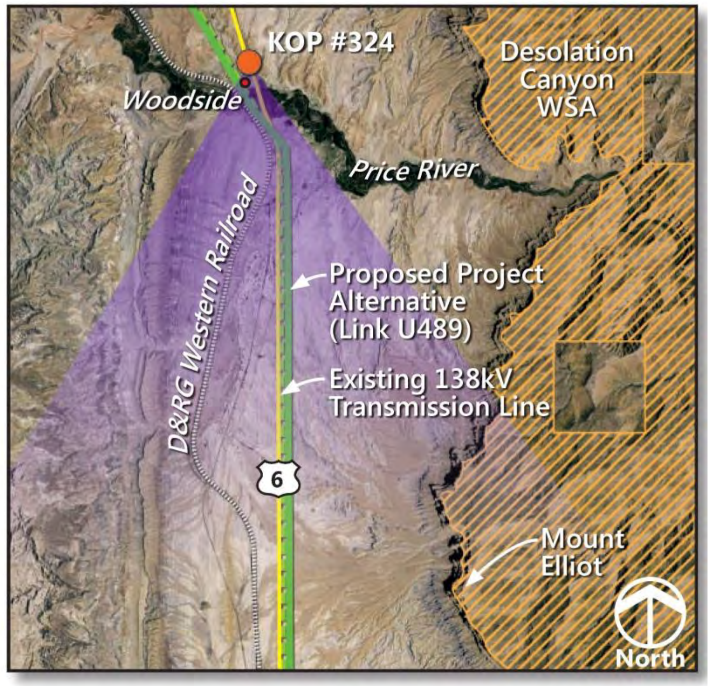
KOP #323 – Old Railroad Grade

Photo Date and Time: October 12, 2011, 9:38 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 73-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

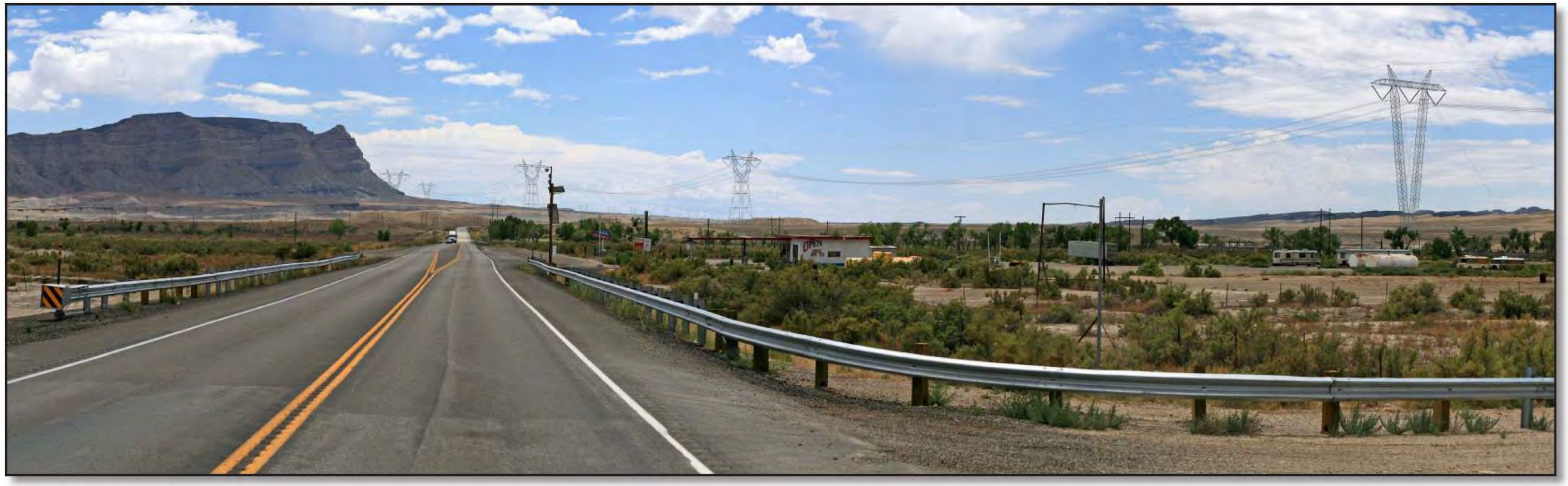
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking south from U.S. Highway 6, north of Woodside, Utah, toward the Price River, an existing 138kV transmission line, Mount Elliot, and BLM VRM Class III lands

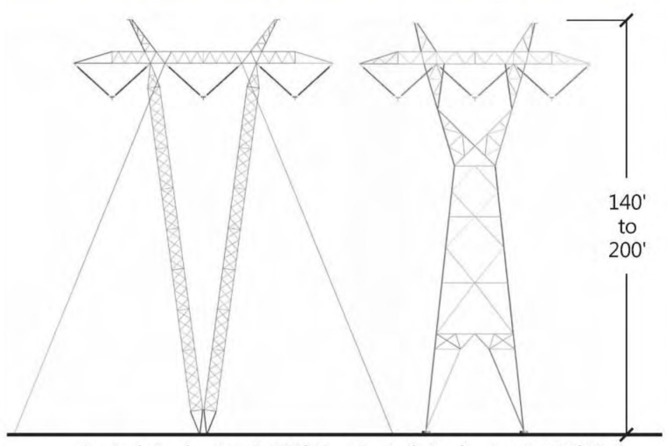


View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative COUT BAX-E

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

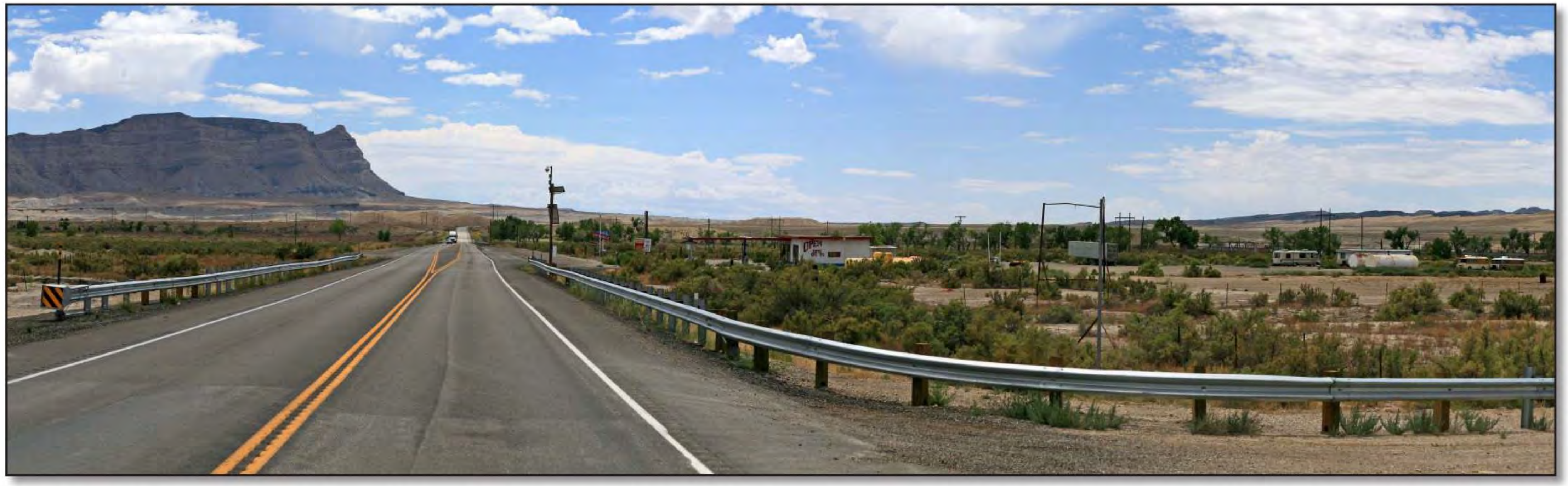
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: July 23, 2012, 12:21 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 66-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

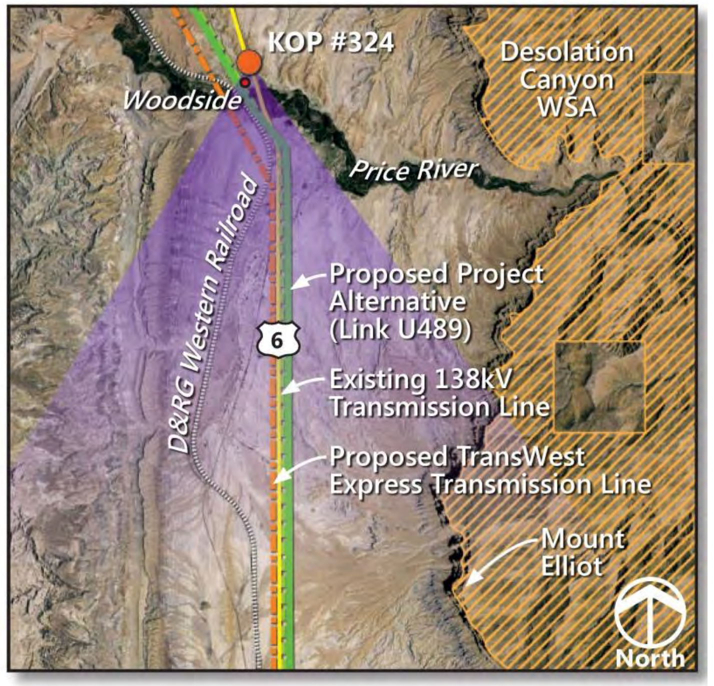
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

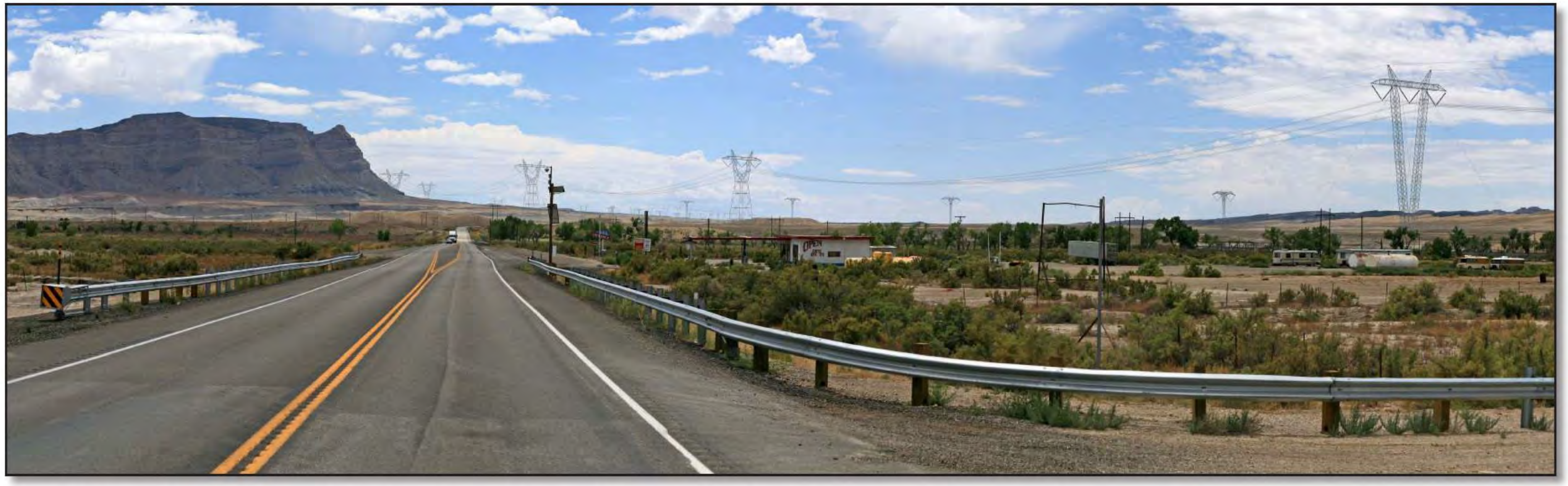
KOP #324 – U.S. Highway 6
North of Woodside



Existing Condition – View looking south from U.S. Highway 6, north of Woodside, Utah, toward the Price River, an existing 138kV transmission line, Mount Elliot, and BLM VRM Class III lands

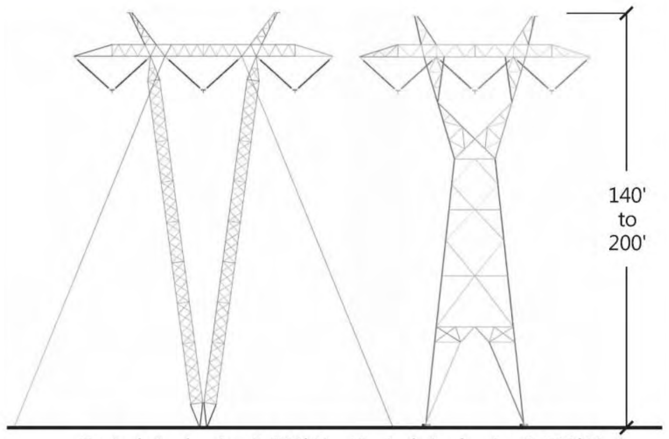

KOP #324
Woodside
Desolation Canyon WSA
Price River
D&RG Western Railroad
Proposed Project Alternative (Link U489)
6
Existing 138kV Transmission Line
Proposed TransWest Express Transmission Line
Mount Elliot
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative COUT BAX-E and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: July 23, 2012, 12:21 p.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 66-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

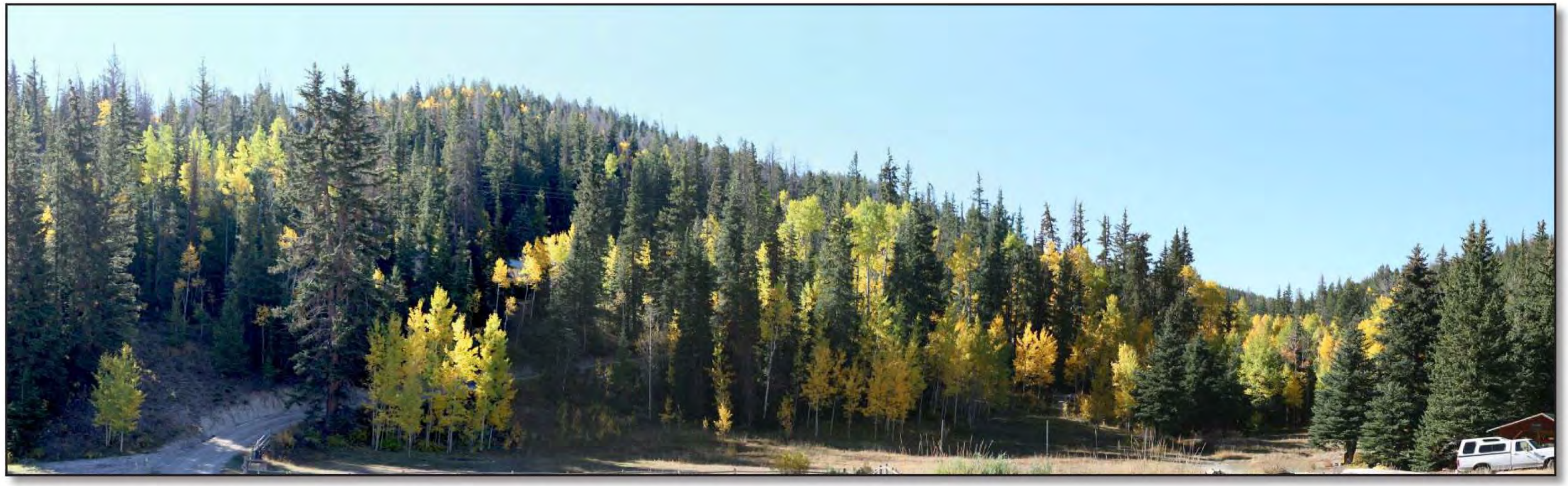
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

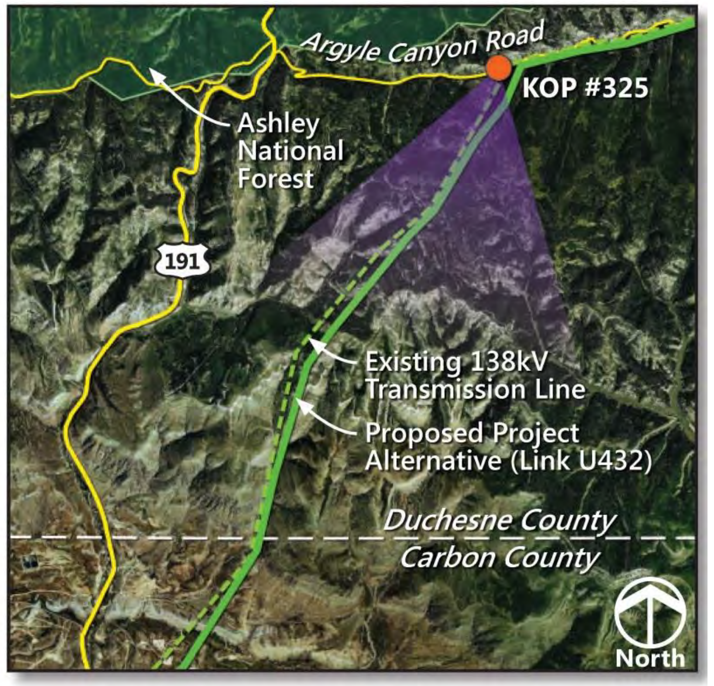
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #324 – U.S. Highway 6
North of Woodside
Cumulative Effects

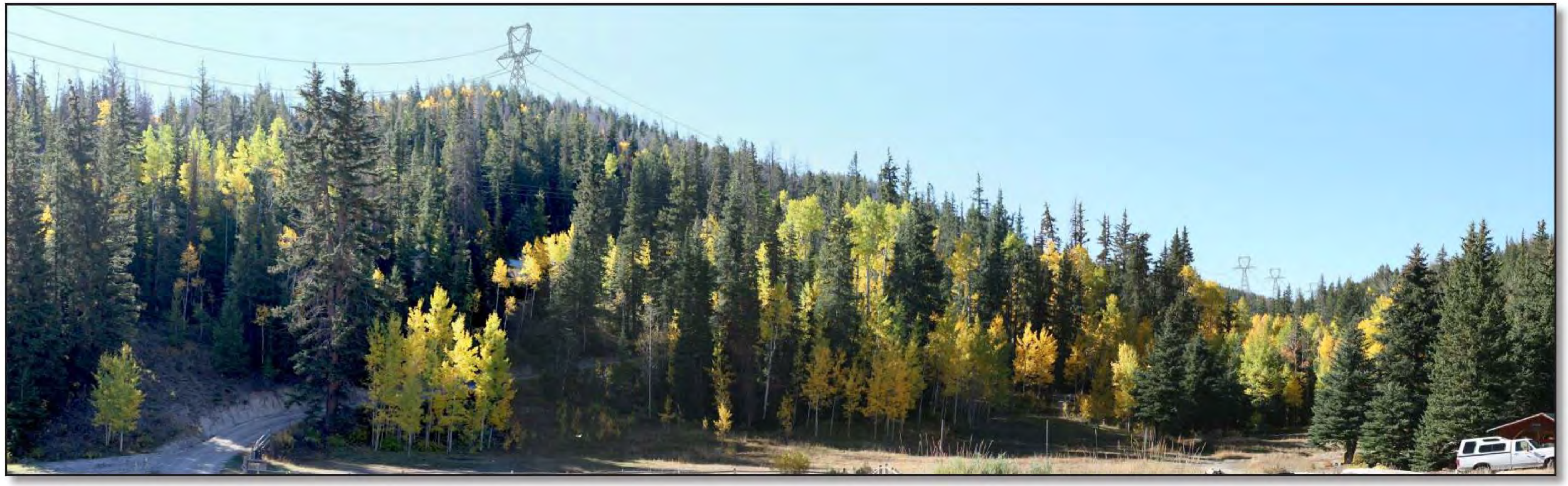
September 2015



Existing Condition – View looking southeast from dispersed residences along Argyle Canyon Road

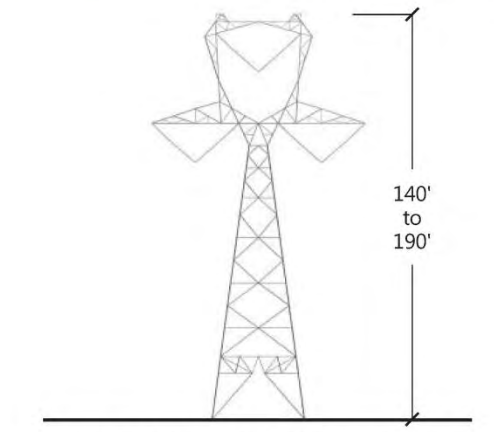


View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative COUT-B

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

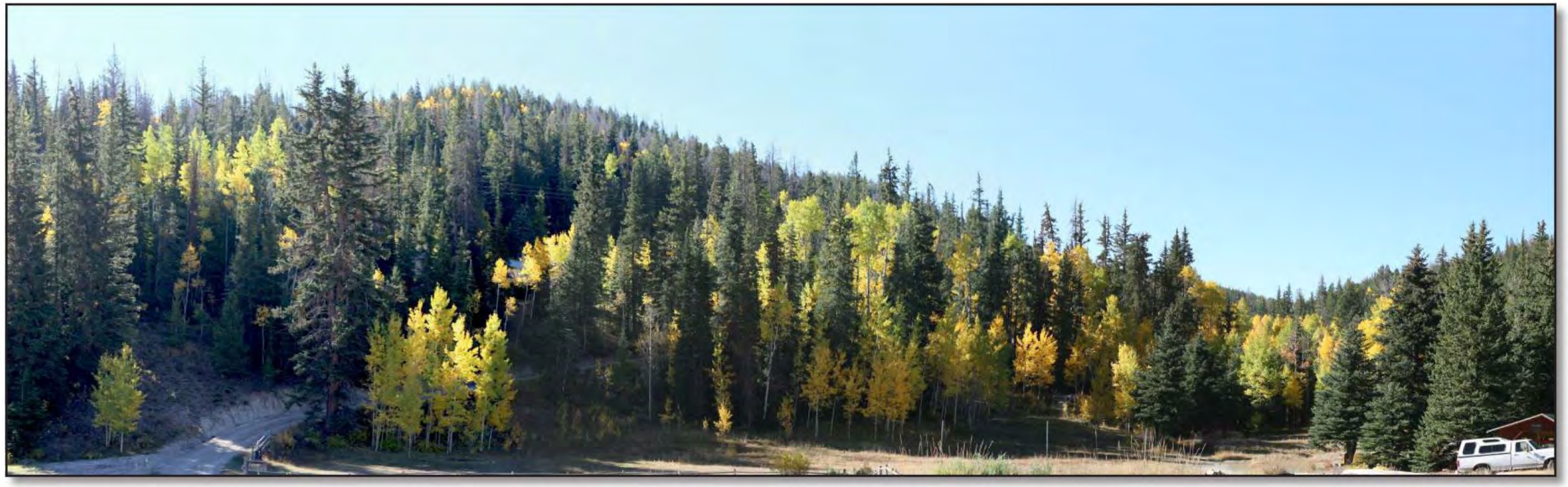
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #325 – Argyle Canyon Residences

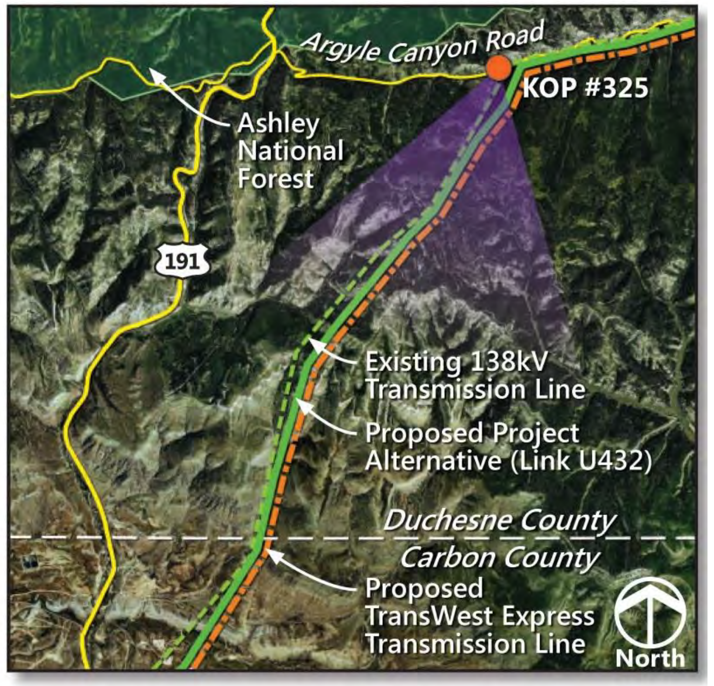
Photo Date and Time: September 28, 2011, 10:07 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 67-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

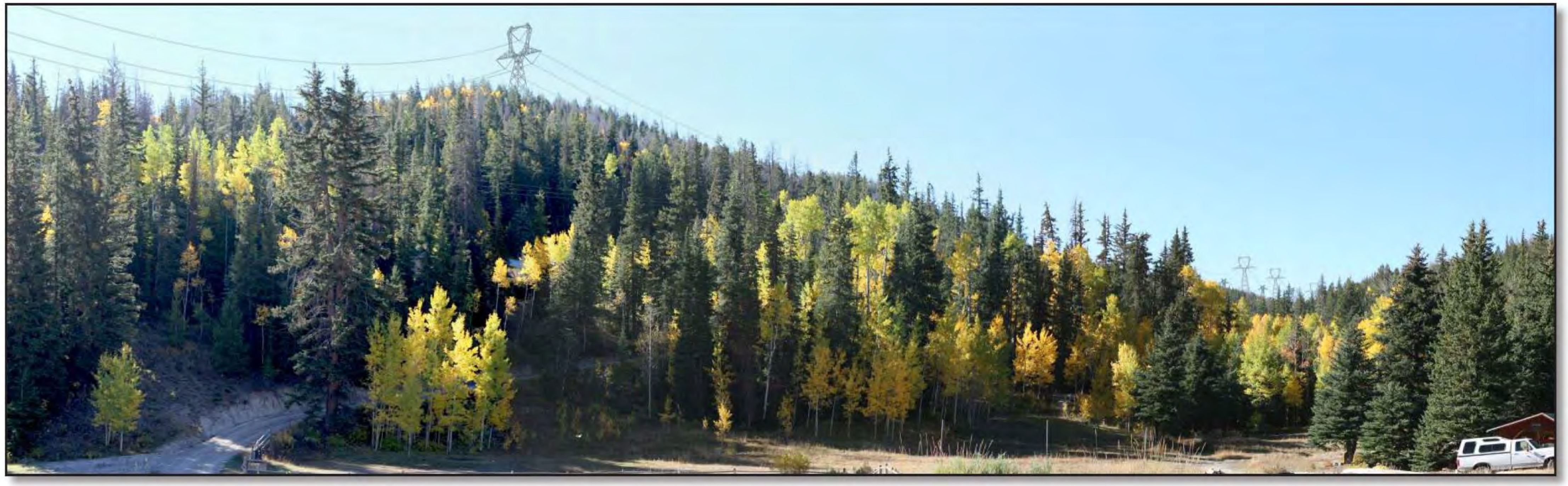
September 2015



Existing Condition – View looking southeast from dispersed residences along Argyle Canyon Road

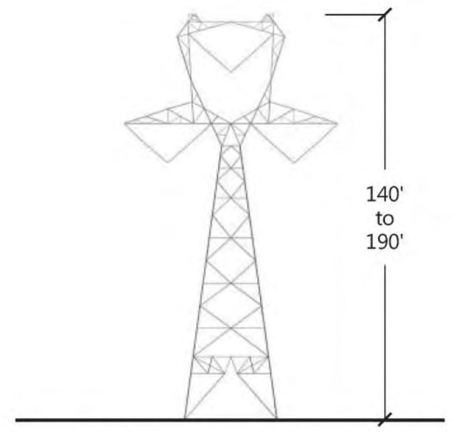

Argyle Canyon Road
KOP #325
Ashley National Forest
191
Existing 138kV Transmission Line
Proposed Project Alternative (Link U432)
Duchesne County
Carbon County
Proposed TransWest Express Transmission Line
North

View Location: Approximate distance to proposed transmission line from photo location is 0.3 mile.



Simulated Condition – View of Alternative COUT-B and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: September 28, 2011, 10:07 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 67-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

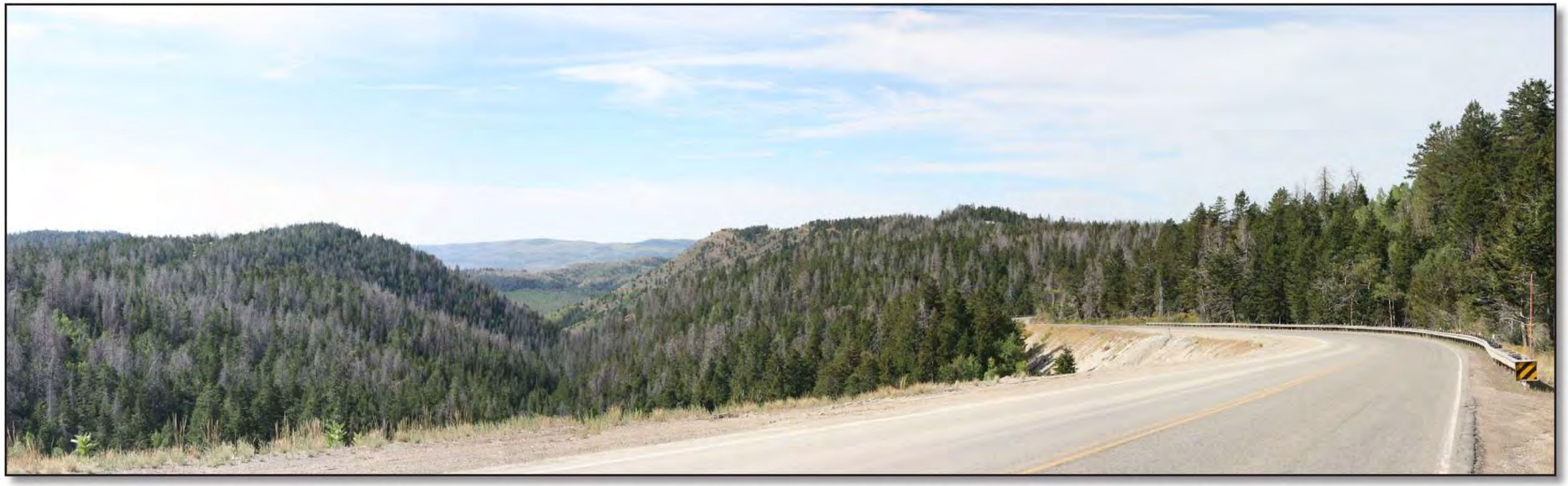
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

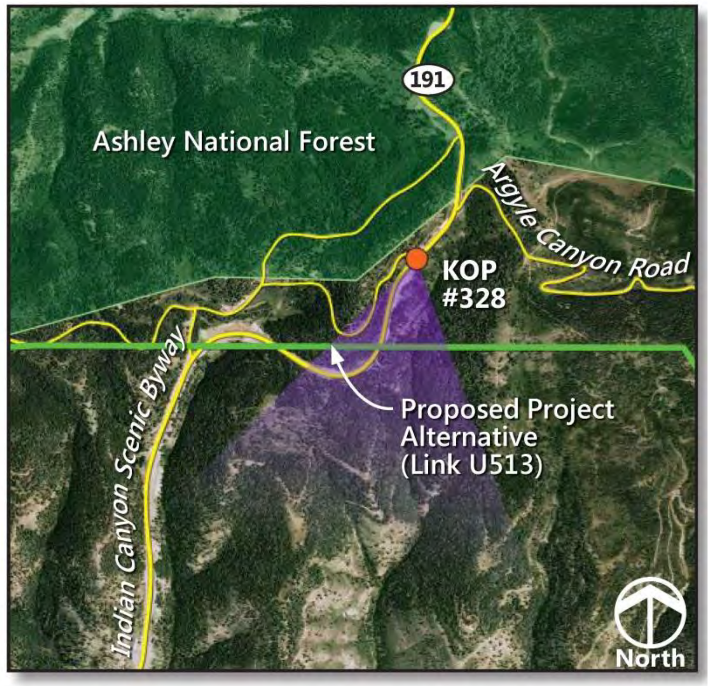
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #325 – Argyle Canyon Residences Cumulative Effects

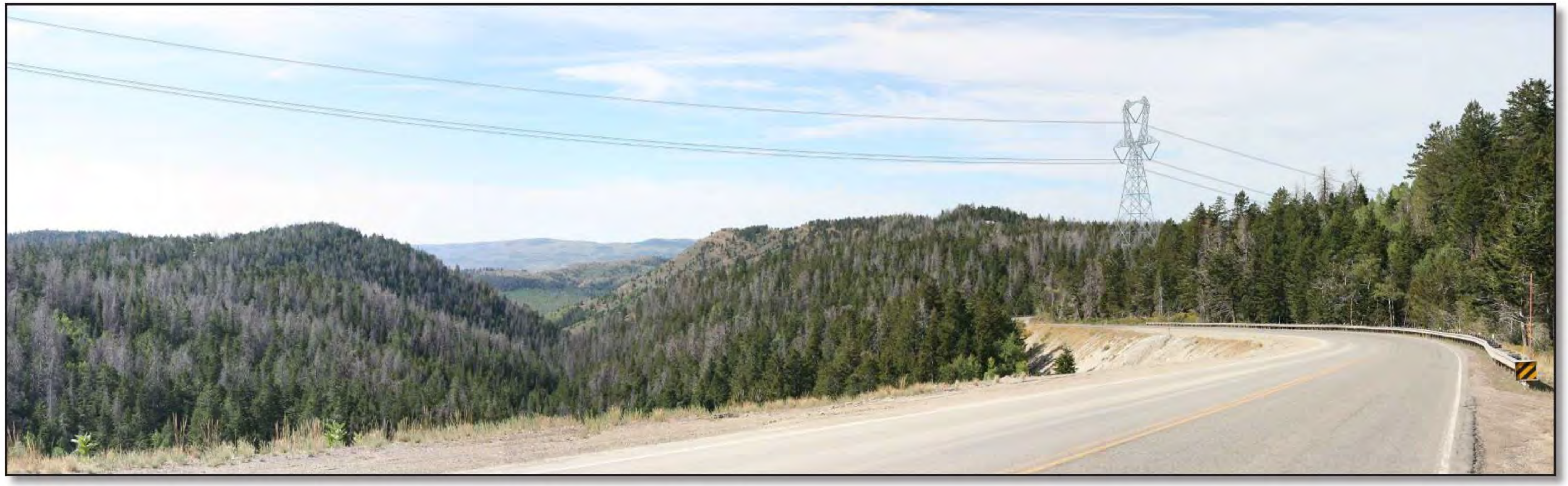
September 2015



Existing Condition – View looking south from U.S. Highway 191, south of Argyle Canyon Road, at the edge of the Ashley National Forest

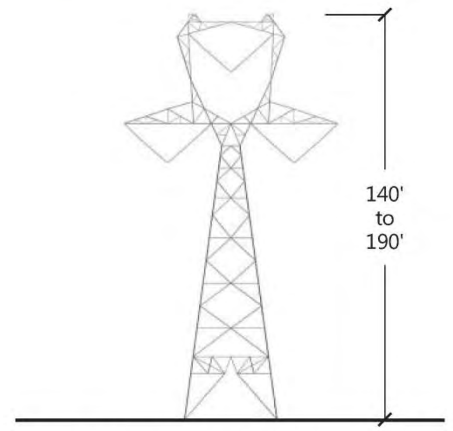

191
Ashley National Forest
Argyle Canyon Road
KOP
#328
Indian Canyon Scenic Byway
Proposed Project Alternative (Link U513)
North

View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Camp Timberlane/Argyle Canyon Variation 5

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

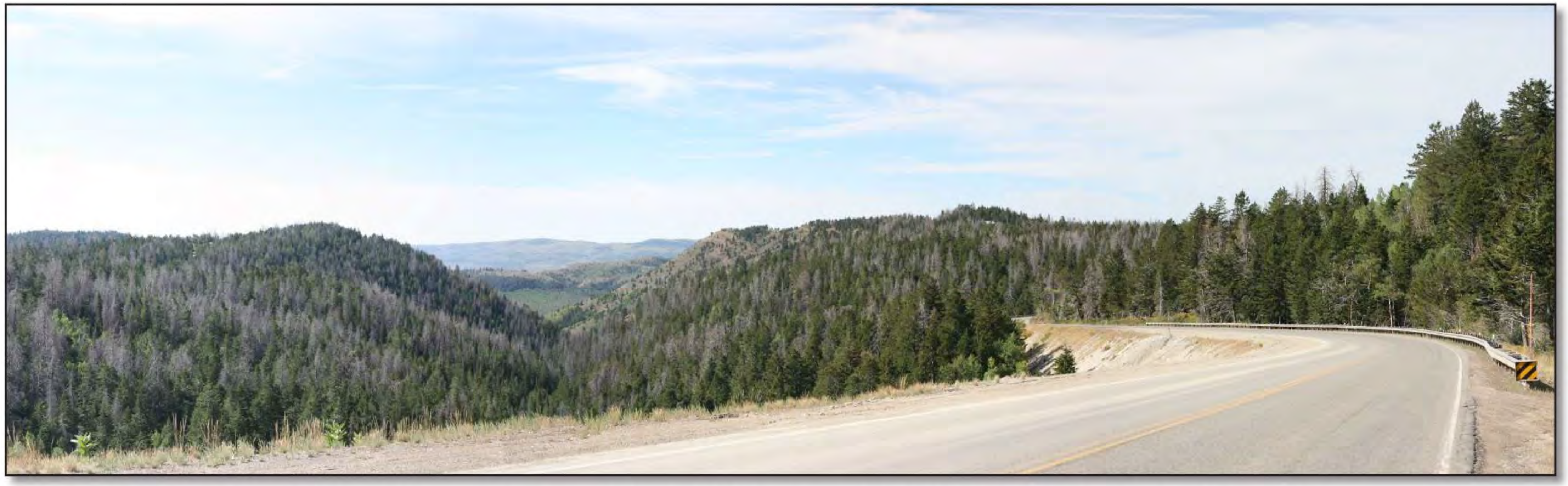
Tower heights shown in simulation vary between 160' and 180'

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

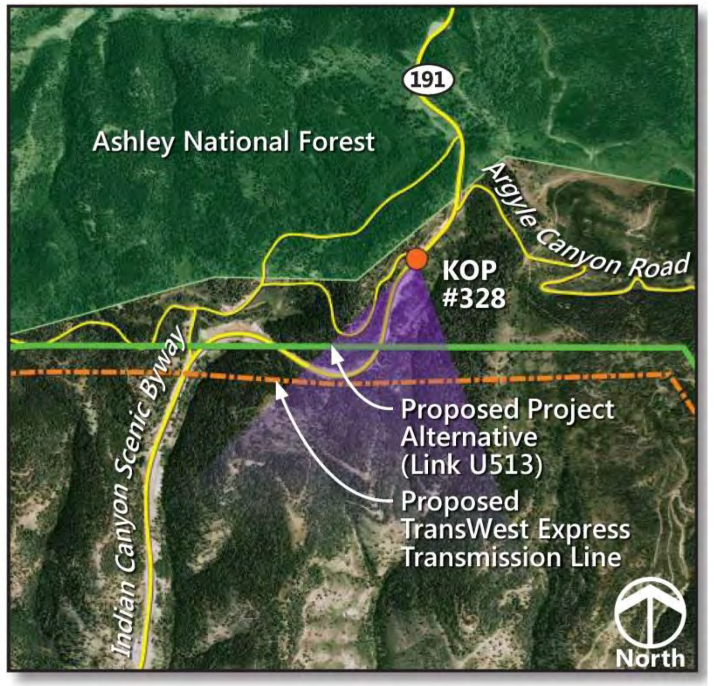
KOP #328 – Indian Canyon Scenic Byway (U.S. Highway 191) north of Emma Park

Photo Date and Time: August 21, 2013, 10:19 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 66-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

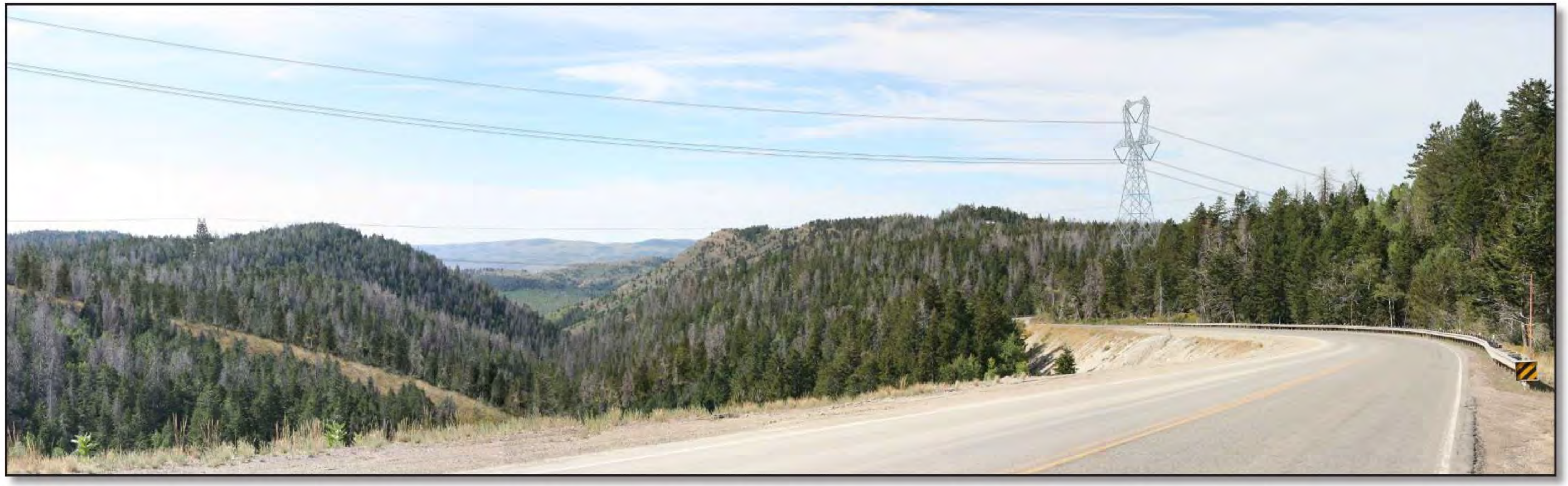
Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.



Existing Condition – View looking south from U.S. Highway 191, south of Argyle Canyon Road, at the edge of the Ashley National Forest

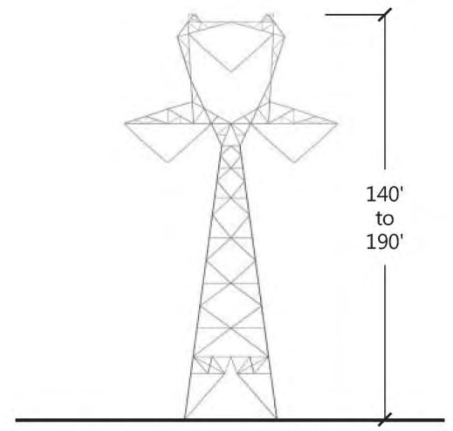

191
Ashley National Forest
Argyle Canyon Road
KOP #328
Indian Canyon Scenic Byway
Proposed Project Alternative (Link U513)
Proposed TransWest Express Transmission Line
North

View Location: Approximate distance to proposed transmission line from photo location is 0.2 mile.



Simulated Condition – View of Camp Timberlane/Argyle Canyon Variation 5 and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAM



Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Tower heights shown in simulation vary between 160' and 180'

Photo Date and Time: August 21, 2013, 10:19 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 66-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

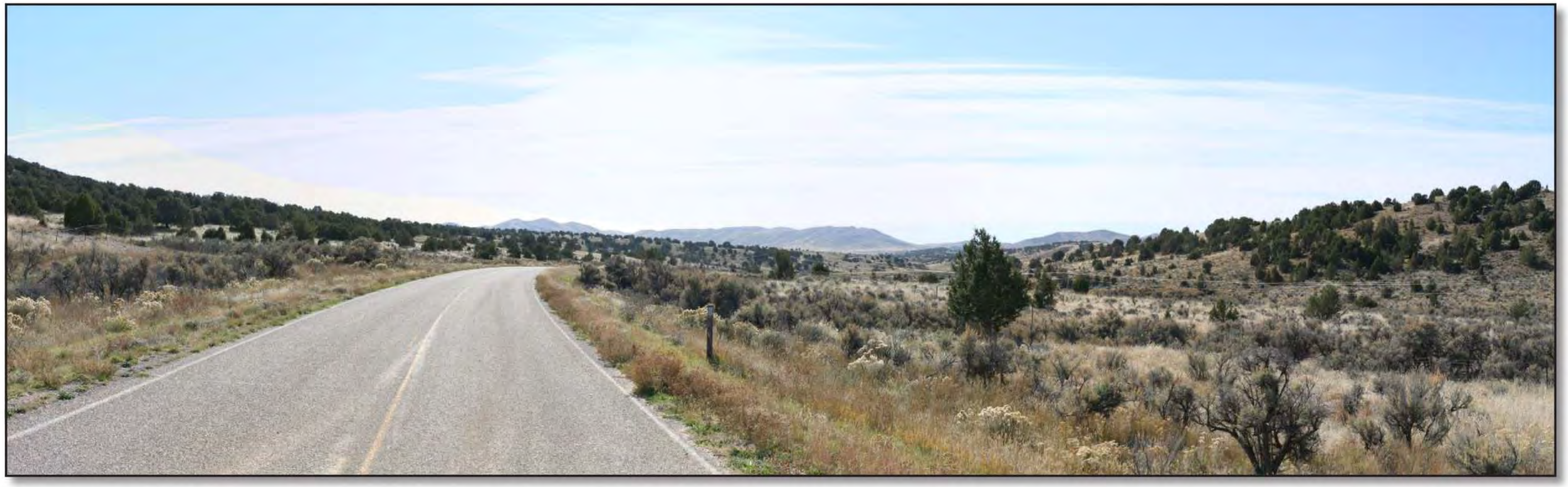
Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 to 190 feet above ground with a span of 1,200 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

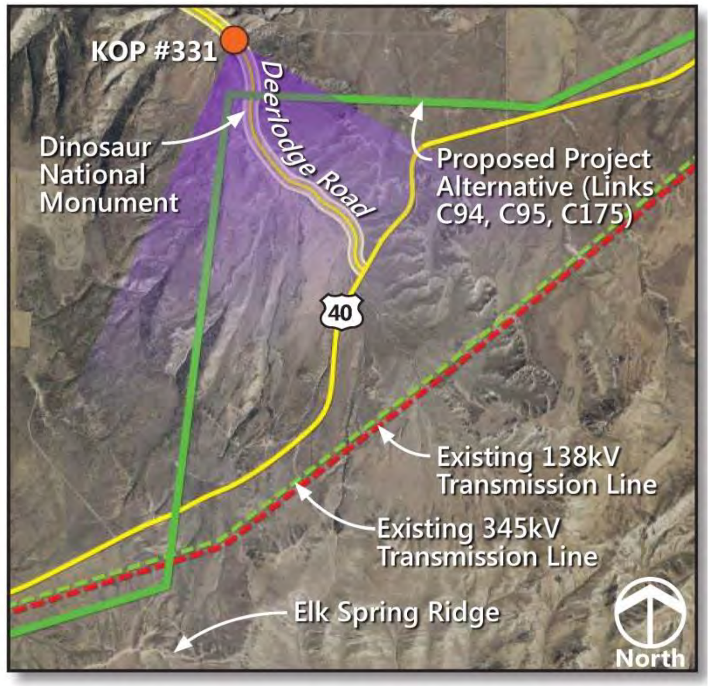
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #328 – Indian Canyon Scenic Byway (U.S. Highway 191) north of Emma Park Cumulative Effects

September 2015

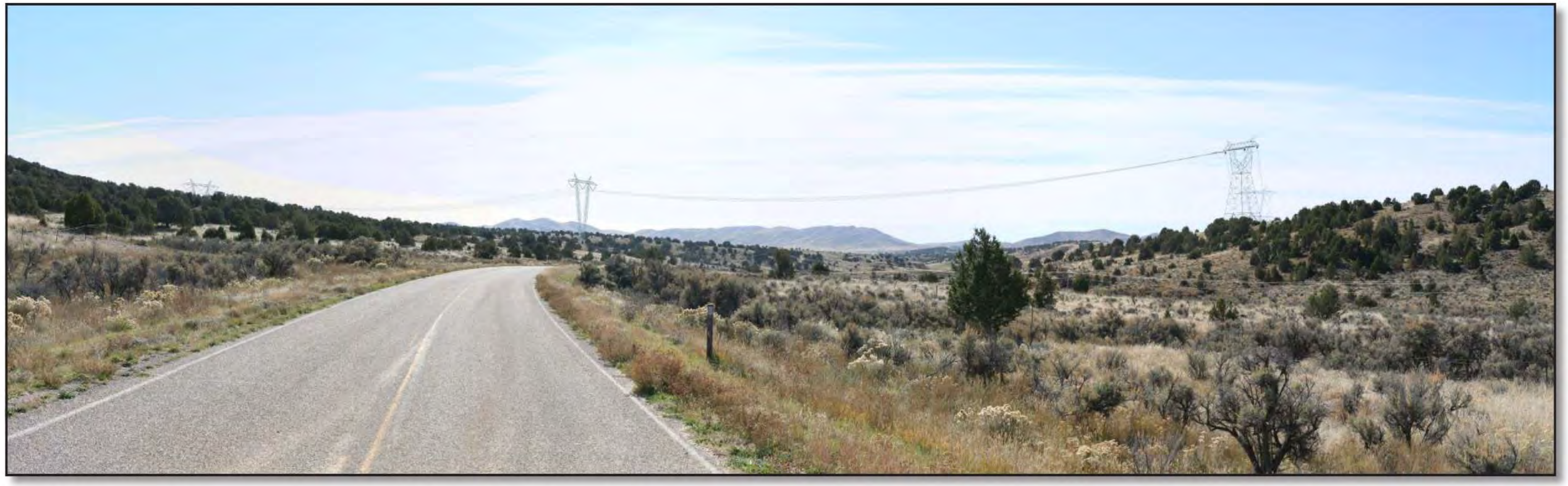


Existing Condition – View looking south from Deerlodge Road in Dinosaur National Monument toward Elk Spring Ridge and BLM VRM Class III lands



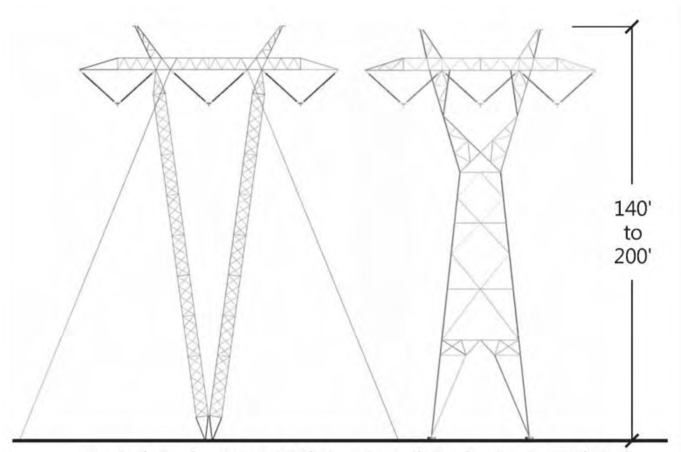
KOP #331
Deerlodge Road
Dinosaur National Monument
Proposed Project Alternative (Links C94, C95, C175)
40
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Elk Spring Ridge
North

View Location: Approximate distance to proposed transmission line from photo location is 0.1 mile.



Simulated Condition – View of Deerlodge Road Area Variation 2

500kV TOWER STRUCTURE DIAGRAMS



Typical single-circuit 500kV dull-galvanized guyed-V transmission tower

Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

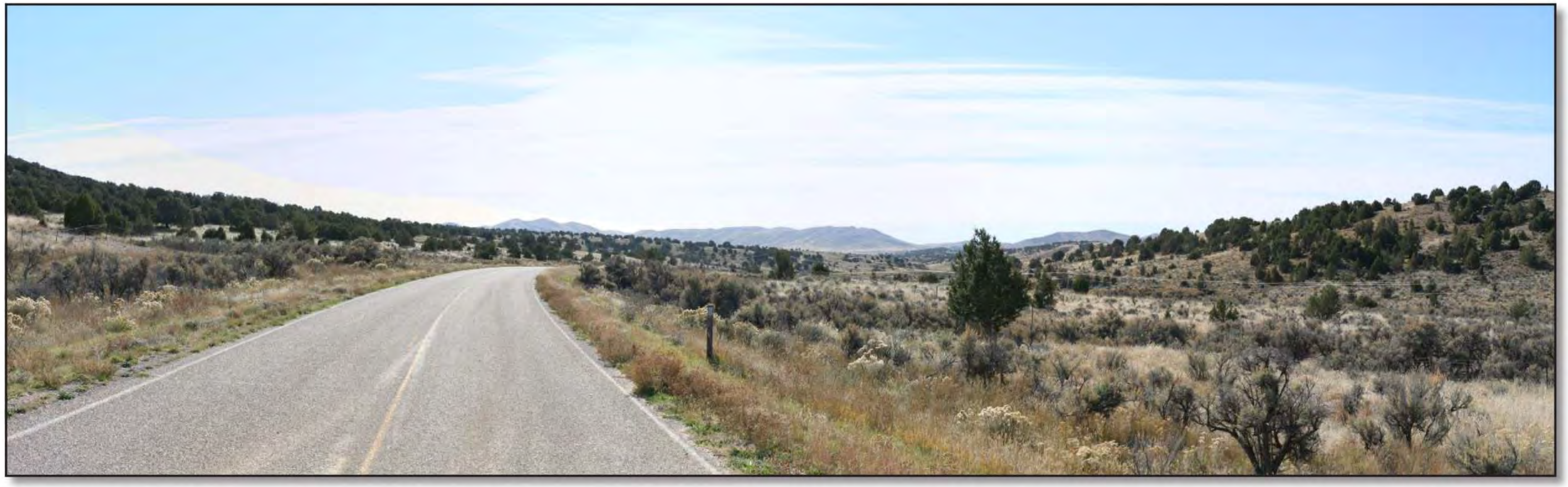
Photo Date and Time: October 17, 2014, 10:22 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 79-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

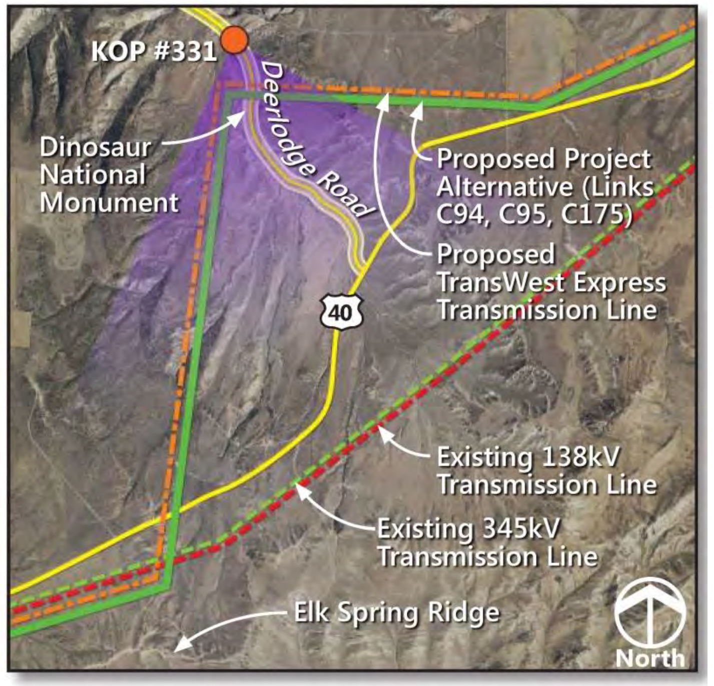
Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #331 – Dinosaur National Monument (Deerlodge Road/Yampa Valley Trail)

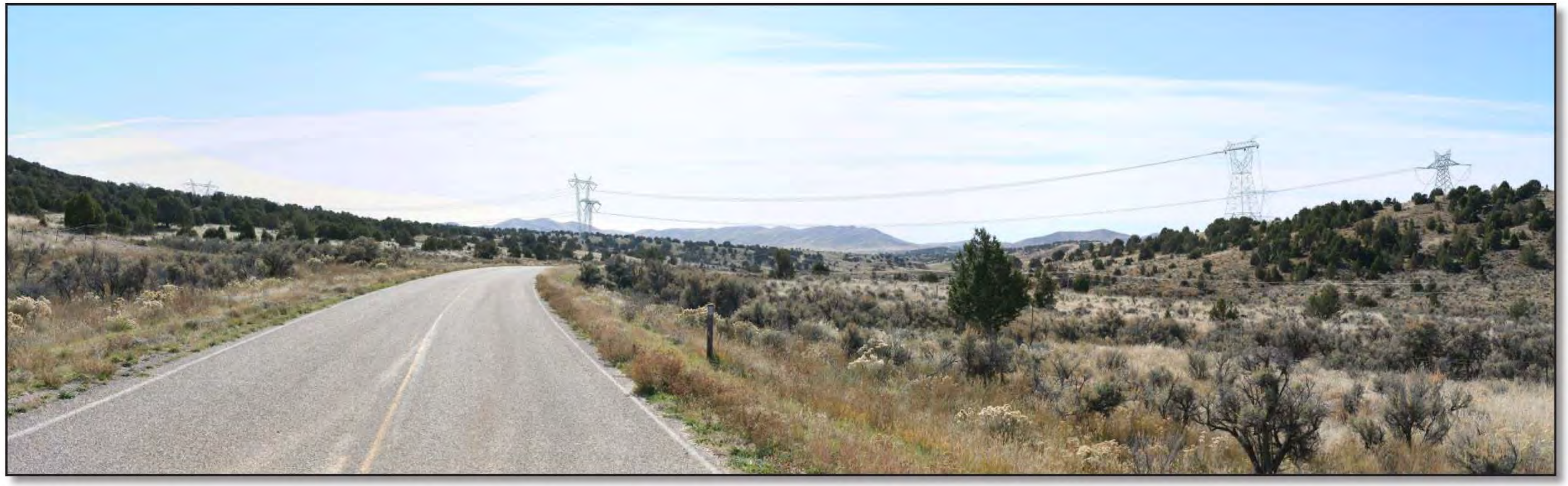
September 2015



Existing Condition – View looking south from Deerlodge Road in Dinosaur National Monument toward Elk Spring Ridge and BLM VRM Class III lands


KOP #331
Deerlodge Road
Dinosaur National Monument
Proposed Project Alternative (Links C94, C95, C175)
Proposed TransWest Express Transmission Line
40
Existing 138kV Transmission Line
Existing 345kV Transmission Line
Elk Spring Ridge
North

View Location: Approximate distance to proposed transmission line from photo location is 0.1 mile.



Simulated Condition – View of Deerlodge Road Area Variation 2 and the proposed TransWest Express transmission line

500kV TOWER STRUCTURE DIAGRAMS

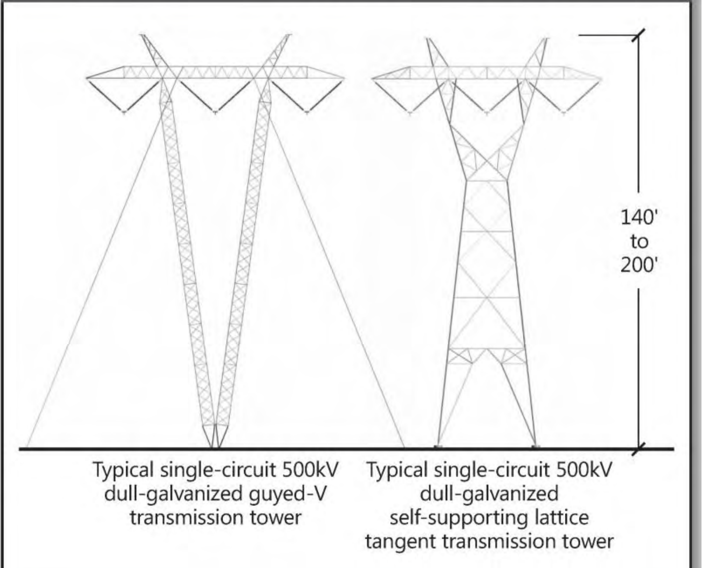

140' to 200'
Typical single-circuit 500kV dull-galvanized guyed-V transmission tower
Typical single-circuit 500kV dull-galvanized self-supporting lattice tangent transmission tower

Photo Date and Time: October 17, 2014, 10:22 a.m. Focal Length: 50mm
The original photographs were taken at 50mm, then stitched together to create this panorama, resulting in a 79-degree field of view.
The above simulation is intended to be viewed 16 inches from viewer's eyes when printed on 11x17 paper.

Energy Gateway South simulations were prepared using three-dimensional tower models and information provided by Rocky Mountain Power. Typical towers would range between 140 feet to 200 feet above ground with a span of 1,600 feet. Tower locations and heights may differ based on final engineering and design.

Cumulative effect simulations depicting the proposed TransWest Express project are conceptual and shown for reference only.

Final EIS and Proposed LUPAs for the Energy Gateway South Transmission Project

KOP #331 – Dinosaur National Monument (Deerlodge Road/Yampa Valley Trail) Cumulative Effects

September 2015

Appendix N
Programmatic Agreement

APPENDIX N – PROGRAMMATIC AGREEMENT

N.1 Introduction

The Bureau of Land Management (BLM), in consultation with the State Historic Preservation Offices (SHPOs) of Wyoming, Colorado, and Utah, agreed to develop a Programmatic Agreement among the various state and federal agencies and consulting parties with an interest in the Energy Gateway South Transmission Project (Project). A Programmatic Agreement records the terms and conditions agreed upon to resolve the potential adverse effects of a complex undertaking in accordance with 36 Code of Federal Regulations 800.14(b). The Programmatic Agreement outlines the stipulations that would be followed concerning the identification, assessment, and treatment of cultural resources for the Project. Signatories agree that the Project will be administered in accordance with the stipulations set forth in the Programmatic Agreement. To date, the signatory parties include the BLM, U.S. Forest Service, National Park Service, and SHPOs of Wyoming, Colorado, and Utah. Additional signatory parties, invited signatory parties (e.g., PacifiCorp [doing business as Rocky Mountain Power, the Applicant]), and concurring parties have yet to be determined. Tribal consultation has been initiated with 33 tribes and the BLM has invited all of these tribes to participate as concurring parties to the Programmatic Agreement.

THIS PAGE INTENTIONALLY LEFT BLANK

FINAL DRAFT

PROGRAMMATIC AGREEMENT
AMONG

THE BUREAU OF LAND MANAGEMENT;
THE USDA FOREST SERVICE;
THE WYOMING STATE HISTORIC PRESERVATION OFFICER;
THE COLORADO STATE HISTORIC PRESERVATION OFFICER;
THE UTAH STATE HISTORIC PRESERVATION OFFICER;
THE BUREAU OF INDIAN AFFAIRS;
THE NATIONAL PARK SERVICE;
THE U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT;
THE U. S. FISH AND WILDLIFE SERVICE;
THE UTE TRIBE OF THE UINTAH AND OURAY RESERVATION;
AND ROCKY MOUNTAIN POWER

REGARDING COMPLIANCE WITH
THE NATIONAL HISTORIC PRESERVATION ACT FOR THE
ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

WHEREAS, PacifiCorp, doing business as Rocky Mountain Power (Applicant) has applied for and the following federal agencies are considering the issuance of federal right-of-way (ROW) grants and associated permits for the Energy Gateway South Transmission Line Project (Undertaking): the Bureau of Land Management (BLM), the USDA Forest Service (USFS), the U.S. Army Corps of Engineers (USACE) Sacramento District, the U.S. Fish and Wildlife Service, the National Park Service (NPS), and the Bureau of Indian Affairs (BIA). These agencies (federal agencies) are Signatories to this Programmatic Agreement (PA); and

WHEREAS, the Undertaking includes the construction, operation and maintenance of an approximately 400 to 500 mile, 500kV transmission line from near Aeolus, Wyoming, to near Mona, Utah, across multiple federal, state, and local jurisdictions and across the ancestral lands of several Indian tribes, as described in Appendix A – Map of Proposed Undertaking and Alternatives; and

WHEREAS, the Applicant intends to construct, operate and maintain the Undertaking according to general parameters contained in the approved project Plan of Development (POD) for the Undertaking, which shall be appended to and made a part of the Record of Decision (ROD) authorizing the ROW grant issued by BLM; and

WHEREAS, the BLM, as lead federal agency, has determined that issuance of the ROW grant triggers the requirements of Title 54 U.S.C. § 300101 et seq. (commonly known as the National

Historic Preservation Act [NHPA] of 1966, as amended [1992]) and Title 54 U.S.C. § 306108 (commonly known as Section 106 of the NHPA) will be cited as NHPA Section 106 throughout this document; and

WHEREAS, the BLM has determined that the Undertaking may have direct, indirect, and cumulative effects on properties included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), hereinafter called historic properties, and, pursuant to 36 CFR Part 800, has consulted with the Wyoming State Historic Preservation Officer (WY SHPO), Colorado State Historic Preservation Officer (CO SHPO), and Utah State Historic Preservation Officer (UT SHPO) who are Signatories to this PA; and

WHEREAS, the effects on historic properties are multi-state in scope and cannot be fully determined prior to approval of the Undertaking, the BLM, in consultation with the SHPOs, has determined to use a phased process to identify historic properties [36 CFR 800.4(b)(2)] and assess those effects [36 CFR 800.5(a)(3)]; such that completion of the identification and evaluation of historic properties, determinations of effect on historic properties, and consultation concerning measures to avoid, minimize, or mitigate any adverse effects to the historic properties will be carried out in phases as part of planning for and prior to any Notice to Proceed (NTP) and Undertaking implementation; and

WHEREAS, the BLM has determined that a PA documenting the terms and conditions for compliance with NHPA Section 106 will be negotiated among Consulting Parties according to 36 CFR 800.14(b)(1)(ii); and

WHEREAS, this PA and the Historic Properties Treatment Plan (HPTP) that will be developed pursuant to this PA will be incorporated into the approved project POD and the BLM ROW grant for this Undertaking; and

WHEREAS, for purposes of the Undertaking, the BLM Wyoming State Office is lead for compliance with the NHPA Section 106 on behalf of the federal agencies [36 CFR 800.2(a)(2)] as evidenced by the Interagency Transmission Memorandum of Understanding (October 23, 2009) and by BLM Washington Office Instruction Memorandum 2010-169, Implementation Guidance for the Interagency Transmission Memorandum of Understanding, and/or by the signing of this PA by any responsible federal agency official, and is the primary contact for all Consulting Parties to this PA and for all Indian tribes; and

WHEREAS, the BLM has notified the Advisory Council on Historic Preservation (ACHP), pursuant to NHPA Section 106 and its implementing regulations (36 CFR 800.6(a)(1), and the ACHP has declined to participate; and

WHEREAS, the BLM recognizes its government-to-government obligation to consult with Indian tribes that may attach religious and cultural significance to historic properties that may be affected by the proposed Undertaking and will continue to consult with affected tribes regarding their concerns under NHPA Section 106 in accordance with 36 CFR 800.2(c)(2); and

WHEREAS, the BLM, as lead federal agency for tribal consultation and coordination, has initiated consultation with the Confederated Tribes of the Goshute Reservation, Eastern Shoshone Tribe of the Wind River Reservation, Hopi Tribe, Jicarilla Apache Tribe, Navajo Nation, Northern Arapaho Tribe of the Wind River Reservation, Northwestern Band of Shoshone Nation, Paiute Indian Tribe of Utah, Pueblo of Acoma, Pueblo of Cochiti, Pueblo of Isleta, Pueblo of Jemez, Pueblo of Laguna, Pueblo of Nambe, Pueblo of Picuris, Pueblo of Pojoaque, Pueblo of San Felipe, Pueblo of San Ildefonso, Pueblo of San Juan, Pueblo of Sandia, Pueblo of Santa Ana, Pueblo of Santa Clara, Pueblo of Santo Domingo, Pueblo of Taos, Pueblo of Tesuque, Pueblo of Zia, Pueblo of Zuni, San Juan Southern Paiute Tribe, Shoshone-Bannock Tribes of the Fort Hall Reservation, Skull Valley Band of Goshute Indians of Utah, Southern Ute Indian Tribe of the Southern Ute Reservation, Ute Indian Tribe of the Uintah and Ouray Reservation, and Ute Mountain Ute Tribe of the Ute Mountain Reservation and has invited all of these tribes to be Concurring Parties to this PA; and

WHEREAS, the agency preferred alternative will cross Indian trust lands of the Uintah and Ouray Indian Reservation and, if selected, whether on tribal and/or individual Indian-owned lands, upon obtaining consent from the Indian landowners(s), the BIA may issue encroachment permits and grants of easement for the Undertaking, and the Ute Indian Tribe is a Signatory to this PA; and

WHEREAS, the USFS, Intermountain Region, manages National Forest System lands in Utah that would be crossed by the Undertaking and the Uinta-Wasatch-Cache National Forest is Lead for the USFS and must therefore consider whether to issue a Special Use Permit for the construction, operation, and maintenance of the Undertaking; and

WHEREAS, the Sacramento District of the U.S. Army Corps of Engineers (USACE), administers a permit program under the authority of the Rivers and Harbors Act of 1899, Section 10 (33 U.S.C. Section 403), and the Clean Water Act of 1972, Section 404 (33 U.S.C. Section 1344) and may issue permits authorizing the discharge of dredged or fill material through Section 404 (the Undertakings) associated with the Undertaking, and is a Signatory to this PA; and

WHEREAS, alternative routes may affect a portion of the Old Spanish National Historic Trail (NHT), which is co-administered by the BLM and National Park Service (NPS), and the NPS has elected to participate; and

WHEREAS, the NPS has jurisdiction over Dinosaur National Monument, and an alternative may cross the Deerlodge Road leading into the monument, and must therefore consider issuing a federal authorization for the construction, operation, and maintenance of the Undertaking; and

WHEREAS**,** the Applicant, as a potential grantee of the ROW, has participated in consultation per 36 CFR 800.2(c)(4), and agrees to carry out the stipulations of this PA, being responsible for all costs including, but not limited to, fieldwork, post-field analyses, preparation of all research, interim, summary, treatment, and mitigation reports, both draft and final, curation of all documentation and artifact collections in a BLM-approved curation facility and repatriation, under the oversight of the BLM, and is an Invited Signatory to this PA; and

WHEREAS, the Undertaking includes lands administered by the Utah School and Institutional Trust Lands Administration (SITLA), an agency in the State of Utah that has a responsibility to comply with Utah Code Annotated (UCA) § 9-8-404 on lands owned or controlled by the SITLA within the Areas of Potential Effects (APEs). The SITLA intends to employ this PA to address applicable requirements for actions resulting from this PA involving land administered by the SITLA. The SITLA, however, does not waive its independent state statutory jurisdiction to make final decisions concerning its lands, and is not bound in its leasing or other approval authority by actions taken, or determination made, concerning federal lands, and has therefore been consulted and invited to become an Invited Signatory to this PA; and

WHEREAS, the Undertaking includes lands administered by the Utah Department of Transportation (UDOT), an agency in the State of Utah, that has a responsibility to comply with UCA § 9-8-404 on lands owned or controlled by UDOT within the APEs. The UDOT intends to employ this PA to address applicable requirements for actions resulting from this PA involving land administered by the UDOT. The UDOT, however, does not waive its independent state statutory jurisdiction to make final decisions concerning its lands, and is not bound in its leasing or other approval authority by actions taken, or determination made, concerning federal lands, and has therefore been consulted and invited to become an Invited Signatory to this PA; and

WHEREAS, the Utah Reclamation Mitigation and Conservation Commission (URMCC) is considering issuing a license to the Applicant to construct, operate, and maintain a 500kv line across any URMCC lands crossed by the Undertaking and has therefore been consulted and invited to become an Invited Signatory to this PA; and

WHEREAS, the BLM continues to consult with the Alliance for Historic Wyoming, Mesa County CO, Milford Archaeological Research Institute, Moffat County CO, National Trust for Historic Preservation, Old Spanish Trail Association, Oregon-California Trails Association, Overland Trail Cattle Company, Tracks Across Wyoming, Utah Public Lands Policy Coordination Office, Utah Professional Archaeological Council, Utah Rock Art Research Association, Utah Statewide Archaeology Society, and the We Nooch Society and has invited all these organizations to become Concurring Parties to this PA; and

WHEREAS, reference to "Consulting Parties" shall include Signatories, Invited Signatories, and Concurring Parties. Tribes and other parties consulting under NHPA Section 106 may decline to sign this document; however, the decision not to sign shall not preclude their continued or future participation as Consulting Parties to this Undertaking; and

WHEREAS**,** the BLM will require that the Undertaking be executed in accordance with the stipulations of this PA, which will be appended to the POD and incorporated into the terms and conditions of the ROW grant and associated permits that may be granted by the federal and state agencies and which shall be appended to and made a part of the ROD;

NOW, THEREFORE, the Signatories to this PA agree that the proposed Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties and to satisfy all NHPA Section 106 responsibilities of the federal agencies for all aspects of the Undertaking.

DEFINITIONS

Terms used in this PA are defined in Appendix B. All other terms not defined have the same meaning as set forth in ACHP's regulations at 36 CFR § 800.16, Section 301 of the NHPA, and BLM 8100 and 8110 Manuals.

STIPULATIONS

The BLM, in consultation with the other participating agencies, shall ensure that the following stipulations are met and carried out:

I. Area of Potential Effects

A. Defining the APE

The BLM, in consultation with the SHPOs and other Consulting Parties, has defined and documented the APE based on direct, indirect, and cumulative effects. The APE will apply to federal, state, tribal, and private lands that may be affected by the transmission line corridor, staging areas, access roads, borrow areas, transmission substations, and other related transmission infrastructure for this Undertaking. The BLM may modify the APE in accordance with Stipulation I.B. of this PA.

1. Direct Effects

   a. For above-ground transmission lines, the APE is 500 feet (250 feet on either side of the ROW centerline).

   b. The APE for access roads, except for existing crowned and ditched or paved roads, is 100 feet on either side of the centerline for a total width of 200 feet.

Existing crowned and ditched or paved roads are not part of the APE unless project-related activities involving use of these roads are planned or discovered in adjacent areas, at which time BLM may modify the APE in accordance with Stipulation I.B. of this PA.

c. The APE for staging areas, borrow areas, substations, and other transmission infrastructure includes the footprint of the facility and a buffer of 200 feet around the footprint of the proposed activity.

d. The APE for pulling/tensioning areas that fall outside the ROW is the footprint of the activity plus a 250-foot radius around these points.

e. The APE for geotechnical drill sites is the boring location footprint, plus a buffer extending in a 250-foot radius from the perimeter of the boring location. In most cases, the APE for the geotechnical drill site locations will fall within the direct APE of the transmission line and other project components.

f. The direct effects APE from operation and maintenance activities is the area of the ROW grant.

2. Indirect Effects

a. The APE for indirect effects on historic properties considers visual, audible, and atmospheric elements that could diminish the integrity of properties for which setting, feeling, and/or association are qualifying characteristics of NRHP eligibility. The indirect APE for the Undertaking extends to the visual horizon or for 3 miles on either side of the transmission line centerline, whichever is closer.

b. Where the APE for indirect effects includes traditional cultural properties (TCPs), properties of traditional religious and cultural importance, National Historic Landmarks (NHL), NHTs, and other classes of historic properties for which setting, feeling and/or association contributes to eligibility, additional analyses may be required and the indirect APE may be modified accordingly following procedures at I.B below.

3. Cumulative Effects

Cumulative effects are the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes other actions. For the purposes of this PA, the APE for cumulative effects is the same as that for direct and indirect effects.

B. Modifying the APE

1. The APE, as currently defined, encompasses an area sufficient to accommodate all of the Undertaking components under consideration as of the date of the execution of this PA. The APE may be modified when tribal consultation, additional field research or literature review, consultation with Consulting Parties, or other factors indicate that the qualities and values of historic properties that lie outside the boundaries of the currently defined APE may be affected directly, indirectly, or cumulatively.

    a. If the BLM determines that the Undertaking or changes to the Undertaking may cause unforeseen direct, indirect, or cumulative effects to historic properties beyond the extent of the established APE, then the BLM may use the process set forth in Stipulation I.B.1.b. to determine whether to modify the APE.

    b. Any Consulting Party to this PA may propose that the APE be modified by providing written justification and illustration of the proposed APE modification. The BLM shall send the modification proposal to all Consulting Parties and consult with them for no more than 30 days in an effort to reach consensus on the proposal. If the Signatories and Invited Signatories agree to modify the APE, the BLM will notify the Consulting Parties of the decision. If all Signatories and Invited Signatories cannot agree to a proposal for the modification of the APE, then the BLM will consider their concerns and will render a final decision.

2. Agreement to modify the APE will not require an amendment to the PA.

II. Identification, Evaluation, and Determination of Effects

A. The BLM will ensure that all work undertaken to satisfy the terms of this PA meets the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) (*Federal Register*, September 29, 1983), hereinafter referred to as *Secretary’s Standards*, and is consistent with the ACHP guidance on archaeology found at http://www.achp.gov/archguide/ and all applicable guidance for evaluating National Register properties. The BLM and other federal agencies have defined conventions or standards for survey corridors and survey intensity to adequately identify historic properties that may be affected by this Undertaking. Except for lands managed by USFS, all survey activity will meet BLM Manual 8110 guidance for a comprehensive survey (BLM Class III Inventory) and be consistent with that of the SHPOs, including guidance and standards found in respective BLM and SHPO state agreements. Identification on lands managed by USFS will follow Forest Service Manual 2360.

B. The BLM will ensure that all identification and inventory is carried out by or under the direct supervision of a person or persons meeting, at a minimum, the applicable professional qualifications standards set forth in the Secretary's Standards and the permitting requirements of appropriate states, tribal, and federal agencies.

C. The Applicant will begin fieldwork only after they have obtained the appropriate federal, tribal, and state permits for such fieldwork. The applicable agencies shall approve Fieldwork Authorizations to conduct inventories on land they manage, respectively, within the timeframe stipulated within the managing agencies' procedures upon receipt of a complete application from the Applicant.

D. The BLM will ensure that a cultural resource inventory will be completed in the following phases:

1. Literature Review

   a. A literature review has been completed for a 4-mile wide corridor, 2 miles wide on either side of the reference centerline, along all alternatives of the proposed Undertaking in order to inform the NEPA analysis. Following completion of NEPA analysis, the literature review will result in a report for each state to be submitted to each BLM State Office and USFS for review and comment and will provided to each state's SHPO, as requested.

   b. The Applicant will conduct an updated literature review by segment to inform all subsequent phases; it will be used as a reference document to support all of the Class III inventories conducted for this Undertaking and will be a starting point for the screening process used to identify historic properties within the indirect APE, as indicated in Appendix C. The Applicant will conduct additional file searches as needed to address changes in the APE and to be current in advance of any Class III inventories.

2. Pre-Construction Inventory

   a. After the BLM determines the selected route, the BLM will request that the Consulting Parties identify areas they deem to have special interest to their members. Consulting Parties will provide this information to the BLM within 30 days of such request. This information will be consolidated and incorporated into the Class III report as consulting party information.

b. Where not covered by previous acceptable Class III inventory or assessments as determined by the BLM and the applicable SHPO, the Applicant will complete Class III inventory under BLM guidance for the direct APE, with an inventory and assessment of indirect effects for the indirect APE, regardless of land ownership. The assessment of indirect effects will entail identification of historic properties that retain integrity and for which setting is an integral part of its character defining features of eligibility. In the early stages of resource identification, the Applicant will undertake a GIS viewshed analysis to determine the visibility of the Undertaking from a prescribed distance in the landscape. As indicated in Appendix C, this analysis will be used as part of the screening process developed for historic properties within the indirect APE.

c. Where there is insufficient information for making site-eligibility determinations, and after consultation with the applicable federal and/or state agency, the BLM and SHPOs may determine that additional archaeological testing or other investigations are necessary to complete NRHP evaluations for cultural resources that may be affected. The Applicant will complete fieldwork and the BLM will complete consultation for this phase prior to the initiation of construction.

d. Determination of archaeological site boundaries within the direct APE is required. Identified resources exceeding the direct APE that are either linear (e.g., roads, trails, fences, etc.) or extremely large will be inventoried and recorded to the same level as resources within the direct APE. The Applicant will record such resources up to a maximum of 1,200 feet beyond the boundary of the direct APE, provided access is authorized, or to the boundary of the resource beyond the direct APE, whichever is less.

e. Documentation may entail recordation of cultural resources over multiple land jurisdictions, including private land. The Applicant will obtain private landowner consent by written documentation to allow inventory beyond the direct APE if the boundaries of cultural resources extend beyond the direct APE. If landowner consent cannot be obtained to access the portion of the site outside the direct APE, the BLM will make a determination of eligibility based upon all known information regarding the site.

f. The Applicant may use existing resources to the extent available to identify historic properties that fall within the indirect APE that may be affected by the Undertaking. Such resources may include existing aerial photography, archival and historic documents such as Government Land Office (GLO) maps, other early maps, local histories, ethnographic information, current existing studies, geographic information system (GIS) data and any other available information, the records search for the Undertaking, targeted field inventory provided access is authorized, and other available means.

3. Inventory During Construction

   a. This phase includes inventory, as needed and regardless of land ownership, of any variances or amendments to the ROW grant or any other changes to the Undertaking that are outside the currently defined APE (including changes in construction ROW and ancillary areas).

   b. The BLM will determine whether the proposed variance will change the indirect APE sufficiently that some additional historic properties are now adversely affected. Additional GIS viewshed analysis or other analysis may be needed to determine effects, as indicated in Appendix C. Such properties will be assessed after-the-fact, and mitigation appropriate to the effect will be determined in consultation with the appropriate Consulting Parties.

   c. Where the BLM determines that additional inventory is needed, no ground disturbance will be allowed in the area of the variance or amendment to the ROW grant or any other changes to the Undertaking until the inventory and the effects determinations and any required on-site mitigation measures are completed and an NTP is issued. The BLM will determine where construction may continue while the additional work is being completed.

E. Determinations of Eligibility and Assessment of Effects

For each cultural resource within the direct APE of a land managing agency's jurisdiction, the agency will provide recommendations for eligibility and effect to the BLM. BLM will then consult with any Indian tribe that attaches religious and cultural significance to any identified resource, and other Consulting Parties to determine NRHP eligibility pursuant to 36 CFR 800.4(c)(1), following National Register Bulletin 15, "*How to Apply the National Register Criteria for Evaluation.*" If the parties cannot reach concurrence on a determination of NRHP eligibility, the documentation will be forwarded to the Keeper of the National Register (Keeper) for a formal determination. If the parties cannot reach concurrence on other determinations, the question will be referred to the ACHP.

The BLM, in consultation with Consulting Parties, will assess effects in order to identify all reasonably foreseeable and potentially adverse effects that occur as a result of the Undertaking.

The BLM will use a visual assessment to determine the effects to setting for those historic properties for which setting, feeling and/or association contribute to eligibility. Such visual assessments will use appropriate state-specific procedures, as well as the screening procedures and GIS viewshed analysis previously discussed and identified within Appendix C.

Determinations of effect may be subject to change due to alterations in the Undertaking and APEs. The BLM will consult with all appropriate Consulting Parties to this PA if any changes in the Undertaking or APE require changes in the agency's determinations of effect.

1. Consultation with Federal Agencies

   The Applicant will provide the Class III inventory reports to the BLM State Office lead. The BLM will distribute the reports to the applicable BLM field offices and other federal agencies who are Signatories to this PA. Agencies will have 30 days from receipt to review the reports and provide comments to BLM. The BLM will take the comments into account prior to submitting the Class III report, including the recommendations for eligibility and assessments of effect, to the appropriate SHPO. The BLM will respond to the agencies regarding how their comments were incorporated into the final document.

2. Consultation with Tribes

   The BLM will provide the Class III inventory reports to tribes who have signed this PA or who have signed a data sharing agreement, consistent with BLM Handbook H-8120-1, Part IV.E. Tribes will have 30 days to review the Class III report and provide comments on eligibility and effect to the BLM. Additional review time may be requested following procedures at Section III.B of this PA.

3. Consultation with Other Consulting Parties

   The Applicant will provide to each BLM State Office a summary document containing brief descriptions, recommendations for eligibility, and assessment of effect for each site. The BLM will distribute the summary document to Consulting Parties (other than tribes and SHPOs) for review, and consult over eligibility and effect, following 36 CFR 800.4(c) and 36 CFR 800.5(a)(1) and (a)(2)(i)-(vii). The document will be consistent with confidentiality provisions of 36 CFR 800.11(c).

   Consulting Parties will have 30 days to review the summary document and provide comments to the BLM. The BLM will take the comments into account prior to submitting the Class III report, including the recommendations for eligibility and assessments of effect, to the appropriate SHPO. The BLM will respond to the Consulting Parties regarding how their comments were incorporated into the final document.

4. Consultation with SHPOs

   BLM will provide the Class III inventory report to the appropriate SHPO and will seek a consensus determination/s of eligibility and effect with SHPO for all cultural resources whether on federal, state, tribal, or private lands. These determinations of effect will serve as the basis for the development of state-specific HPTPs.

   a. If the BLM and SHPO agree that the cultural resource is not eligible for listing in the NRHP, no further review or consideration under this PA will be required for such cultural resources.

   b. If the BLM and SHPO agree that the cultural resource is eligible, then effect determinations will be in accordance with Stipulation II.E.

   c. If the BLM and SHPO do not agree on eligibility, and agreement cannot be reached within 30 days, then the BLM will request a determination of eligibility from the Keeper of the National Register (Keeper), pursuant to 36 CFR 800.4(c)(2) and 36 CFR Part 63. The Keeper's determination will be final.

III. Reporting, Consultation, and Review of Documentation

A. At the conclusion of the fieldwork described in Stipulation II.D**,** the Applicant will submit copies of the draft reports and site forms to each BLM State Office for distribution to the appropriate federal and state agencies for review and to tribes who have signed this PA. Each report will be consistent with the appropriate state guidelines and formats including recommendations of eligibility and effect. Reports shall also include appropriate state site inventory forms, other documentation for results of identification of properties of traditional religious and cultural significance to tribes, and recommendations on the historic significance, integrity, and NRHP eligibility of identified cultural properties [36 CFR 800.4(c)].

B. The applicable federal and state agencies and tribes will have 30 days from receipt of each report to review and provide comments on the initial draft to the lead BLM office. These comments will address adequacy of inventory and reports, the eligibility of properties identified [36 CFR 800.4(c)], and the effects of the Undertaking on any cultural resources considered to be historic properties [36 CFR 800.4(d) and 36 CFR 800.5]. Based on the comments received, the BLM may require the Applicant to revise the reports. Any revised reports will be submitted to the appropriate BLM State Office for a 15-day review. BLM will have five days to accept the report prior to submission to the SHPOs.

C. The Applicant will submit all other outstanding reports, such as addendum reports for variances, mitigation or monitoring, or other reporting actions required under an HPTP, no later than 3 years after the completion of the relevant work element (as described in the HPTP) of the Undertaking.

D. If the time frames discussed above cannot be met, reviewing offices will notify the lead BLM office main point of contact by email requesting a review extension and providing the justification for the delay. The lead BLM office will determine whether to grant an appropriate extension, not to exceed 30 days.

IV. Tribal Consultation

Through government-to-government consultation with applicable Indian tribes, pursuant to 36 CFR 800.2(c)(2), the BLM and other federal agencies, as appropriate, will make a good faith effort to identify properties that have traditional religious and cultural importance to one or more Indian tribes and to determine whether they are historic properties. Discussion of these properties will be integrated, as applicable, as a separate chapter or appendix, or submitted as a separate report. Ethnographic studies are not required, but may be requested by tribes and any that are completed would become an appendix to the Class III inventory report. Confidentiality concerns expressed by tribes for properties that have traditional religious and cultural importance will be respected and will be protected to the extent allowed by law (see Stipulation VI).

V. Resolution of Adverse Effects

If the BLM determines that the Undertaking will have adverse effects on historic properties, the BLM shall consult with the appropriate SHPOs, Consulting Parties and tribes to develop and evaluate alternatives or modifications to the Undertaking that could avoid, minimize, or mitigate adverse effects on those properties. If there are adverse effects on historic properties, the BLM will ensure state-specific HPTPs are prepared and implemented.

VI. Historic Properties Treatment Plan

A. Each HPTP will provide specific avoidance, minimization, or mitigation measures, commensurate with the adverse effect of the Undertaking, and to lessen any potential cumulative effects.

1. The Applicant will prepare an HPTP for each state in which historic properties will be affected by the Undertaking. Each HPTP will be prepared in consultation with the appropriate SHPO, Consulting Parties and tribes, and will be consistent with the *Secretary's Standards* and the Advisory Council on Historic Preservation's (ACHP) *Section 106 Archaeology Guidance* (2009), Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), and Historic American Landscapes Survey (HALS) guidance (http://www.nps.gov/hdp/), and appropriate state guidelines.

2. Each HPTP will list all historic properties that have been identified within the direct APE, including those avoided, by land ownership, by state, and by construction segment of the Undertaking in which it occurs. The plans will identify the specific avoidance, minimization, and mitigation strategies proposed to address the direct, indirect, and cumulative effects of the Undertaking for both individual historic properties and specific groups of historic properties (e.g., archaeological sites, trails, etc.).

   a. Each plan will identify whether the actions required to implement avoidance, minimization, or mitigation for each historic property must be implemented prior to the authorization of any ground-disturbing activities in a segment (e.g., archaeological data recovery, landscape photography), or will be implemented following authorization of ground-disturbing activities (e.g., historical research, installation of an interpretive kiosk, public education materials, etc.).

   b. Each plan will include a table listing each historic property including:
      (1) a distinctive name or number;
      (2) a brief description of the property;
      (3) its sequential location in terms of distance and direction from a construction link;
      (4) the nature or kind of each required treatment measure pertaining to each historic property (e.g., avoidance, minimization, landscape photography, archaeological data recovery, etc.);
      (5) identification of those corresponding treatment measures, if any, which must be completed prior to authorization of ground-disturbing activities and those that may be completed after such authorization of ground-

disturbance in the area requested by the Applicant for initiation of construction; and

(6) documentation and reporting of proposed treatment and mitigation.

3. Each HPTP will include a Monitoring Plan for implementation of the Undertaking, which may include tribal participation. The Monitoring Plan will be developed as a subsection of the HPTP for implementation during construction, operation, and maintenance. This plan will address monitoring for compliance with the HPTP; monitoring as part of a strategy to avoid, minimize, or mitigate direct, indirect or cumulative adverse effects; and monitoring for inadvertent discoveries, at any time during the Undertaking. All monitoring plans shall identify monitoring objectives and the methods necessary to attain these objectives.

4. Each HPTP will incorporate research designs as needed to guide data recovery and other treatment efforts. Existing research designs included within historic context documents acceptable to the BLM, USFS, and SHPO will be used if BLM/USFS and SHPO agree that they are appropriate to the specific property or group of properties.

5. Other treatment measures for adverse effects may include, but will not be limited to:

   a. Completion of NRHP nomination forms
   b. Conservation easements
   c. HABS, HAER, or HALS documentation
   d. Acquisition of land containing NHT segments or other historic properties for transfer to public ownership
   e. Partnerships and funding for public archaeology projects
   f. Print publication (brochure/book)
   g. Digital media publication (website/podcast/video)

6. Because each HPTP will be used as a field guide during implementation of the Undertaking, it also will include provisions for the treatment of Inadvertent Discoveries of Cultural Resources and Human Remains.

B. Review and Approval of HPTPs

1. Once each HPTP is completed, the Applicant will provide the appropriate plan to each BLM State Office who will distribute the plan to the applicable federal and state agencies for a 30-day review. If necessary, the Applicant will revise the plans and resubmit them to the BLM within 15 days.

2. The BLM will then provide the HPTPs to the tribes and other Consulting Parties for a 30-day review. All comments will be submitted to the BLM.

3. The BLM will take the comments of the Consulting Parties into account and direct the Applicant to revise the plans, as appropriate. The Applicant will revise and provide new plans to the BLM within 10 days. Any revised HPTP will be provided to Consulting Parties for a second review and comment period, not to exceed 15 days. The BLM will submit the final HPTP to each SHPO for a 15-day review and concurrence.

C. Implementation of HPTPs and Issuance of Notices to Proceed (NTP)

The BLM may issue an NTP for a portion of the Undertaking if the authorized activities will not preclude the BLM's or Applicant's ability to re-site or re-locate other facilities in adjacent portions of the Undertaking to avoid adverse effects to historic properties, or to resolve those adverse effects in accordance with terms of this PA.

D. Operations and Maintenance

The HPTP shall include operations and maintenance to address all activities related to the functioning of the Undertaking after construction and reclamation are completed. These permitted activities are defined in the POD. During operations and maintenance the ROW grant holder will be required to follow all the terms, conditions, and stipulations concerning historic properties which are included in the POD as part of the ROW grant.

1. The HPTP will identify those stipulations necessary to ensure the consideration of historic properties throughout the life of the ROW grant.

2. The BLM will be responsible for ensuring that the stipulations in the BLM ROW grant are enforced on BLM land for the life of the grant. Federal or state agencies issuing a permit for the Undertaking will take responsibility for permit enforcement under their jurisdiction.

3. The HPTP will identify a variance review process for operations and maintenance, to address any changes in procedures that could have an adverse effect on historic properties in the ROW. The Applicant will submit a request for variance review to the BLM for any proposed changes in use of equipment or other changes that may result in ground disturbance outside of the previously surveyed APE.

4. The BLM will consult with applicable land-managing agencies regarding such proposed changes. The BLM will develop a list of operation and maintenance activities that will not be subject to additional NHPA Section 106 review, and will identify the types of activities that will require additional NHPA Section 106 review.

5. The BLM administration of the ROW grant shall include appropriate BLM cultural resource specialists to participate in ROW grant review and to review compliance with stipulations or changes in procedures that may affect historic properties in the ROW. Coordination with applicable land-managing agencies will occur during the review process.

E. Upon final acceptance by the BLM and SHPO, each HPTP will be appended to this PA.

F. The HPTP shall provide for the preparation of reports as called for during the implementation of plan activities, including but not limited to monitoring reports, HABS/HAER/HALS documentation, and archaeological data recovery documentation, if applicable.

G. The BLM will ensure that the Applicant completes draft and final reports as called for under the implementation of the HPTP. The BLM will send the reports out to the Consulting Parties to this agreement for review as described in Stipulation VI. Review times will be 30 working days unless otherwise noted.

VII. Protection of Confidential Information

All Consulting Parties to this PA agree that, to the extent consistent with Title 54 U.S.C. § 307103 (formerly Section 304 of the NHPA), and the Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. 470aa-mm) Section 9(a), cultural resource data from this project will be treated as confidential by all Consulting Parties and is not to be released to any person, organization, or agency not a Consulting Party to this PA. Duplication or distribution of cultural resource data from this Undertaking by any Consulting Party requires written authorization from the applicable BLM State Director. Confidentiality concerns for properties that have traditional religious and cultural importance to the tribes will be respected and will remain confidential to the fullest extent permitted by law.

VIII. Personnel Training

A. Prior to conducting personnel training, the Applicant will provide their cultural resource training materials to BLM for a 30-day review. The BLM may request a 15-

day review by the Consulting Parties. Prior to being authorized to work in the APE, all personnel (including contractors, inspectors and monitors) involved in construction, operation, and maintenance of the Undertaking will receive instruction by the Applicant, with BLM oversight, on site avoidance and protection measures, including information on the statutes protecting cultural resources. In addition, sensitivity training regarding sites of importance to tribes and tribal issues in general will be covered. At a minimum, all personnel shall receive in-person training discussing the importance of cultural resources, such as historic trails, and archaeological laws, including penalties for violation. This training program also will apply to personnel hired after the project has started. The Applicant shall maintain records demonstrating that the personnel training described abovehas been carried out and that all on-site workers have received the training.

B. If construction occurs outside of the approved ROW, BLM will assess whether to issue a stop-work order while the Applicant and the applicable federal agency provides additional training for personnel in the area.

IX. Discovery of Previously Unidentified Cultural Resources

If potential historic properties are discovered or unanticipated effects occur on known historic properties at any time during the Undertaking, the BLM will implement the Inadvertent Discovery Plan for the applicable state, which will be developed in consultation with the applicable Consulting Parties prior to issuance of any NTP. This plan will be included as an appendix to each HPTP.

X. Discovery of Human Remains

If human remains are discovered at any time during the Undertaking, the BLM will follow the provisions of applicable state and local laws and the Native American Graves Protection and Repatriation Act [NAGPRA (25 U.S.C. § 3001)] of 1990. Procedures for the inadvertent discovery of human remains will be developed in consultation prior to the issuance of any NTP. This plan also will address curation and repatriation. Such procedures will be included as an appendix to the HPTP and will include securing the area, stopping work within a 200-foot radius from the point of discovery and notifying, within 24 hours, the BLM and other appropriate federal or state agencies. Human remains will be left in place, fully protected and treated with dignity and respect following ACHP’s Policy Statement on the Treatment of Burial Sites, Human Remains, and Funerary Objects (February 23, 2007).

XI. Curation

A. The BLM shall ensure that curation of the material remains and all associated records resulting from identification and data recovery efforts is completed in accordance with 36 CFR Part 79 and the provisions of NAGPRA (25 U.S.C. § 3001). The Applicant will bear all costs of curation and repatriation. Documentation of the curation of these materials will be provided to the BLM and other land managing agencies, as appropriate, within 60 days of BLM's acceptance of the applicable report. Materials found on federal lands will remain federal property when curated (unless otherwise appropriately repatriated in accordance with federal law).

B. Archaeological materials collected from private lands pursuant to the implementation of this PA shall be maintained in accordance with 36 CFR Part 79 until all analysis is complete. Private landowners may wish to donate collections from their lands to a museum, university, historical society, or other repository. Otherwise, collections from private lands shall be returned to the landowners within 60 days of acceptance by the applicable SHPO of the final inventory or any mitigation report (as described in the HPTP). The Applicant will provide documentation of the disposition of private collections to the BLM within 15 days of the landowner's receipt or transfer of the collections.

XII. Initiation of Construction Activities

A. The BLM will authorize treatment and/or surface-disturbing construction activities only after issuance of a federal ROW grant, Special Use Authorization if appropriate, and specific NTP(s) or any other federal or state authorization to the Applicant. NTPs will be issued on a construction segment basis.

B. Prior to issuance of an NTP for a specific construction link, the BLM shall ensure that implementation of each state's final HPTP is completed to a level acceptable to the BLM for the area requested under the NTP, in consultation with the appropriate SHPO. The implementation will apply to all land in the construction link regardless of ownership. An acceptable level may consist of the following conditions:

1. The construction of the segment will not preclude rerouting of other segments or affiliated ancillary feature locations.

2. The BLM, in consultation with the appropriate SHPO, per Stipulation II.D-E, determines that either:
    a. No historic properties are present within the APE for that construction segment; or

b. Historic properties are present within the APE for that construction link, but will not be affected; or
c. Historic properties are present and will be adversely affected, but mitigation measures identified in the HPTP for that construction segment have been implemented according to V.C.

XIII. Changes in Construction Activities

The BLM and SHPOs will make every effort to expedite review of any changes to construction plans after initiation of construction. If the Applicant proposes changes in the construction ROW or any ancillary areas outside of the APE surveyed for the Undertaking, the Applicant will conduct identification and evaluation of historic properties in accordance with Stipulation II. Results of the inventory report will be handled as follows:

A. If the inventory results in no cultural resources identified, the Applicant will submit copies of the draft inventory report to the applicable BLM State Office for distribution to the appropriate federal and state agencies for review. These agencies will have 5 days to provide comments on the report to the applicable BLM State Office. If the BLM accepts the findings, the BLM may issue the NTP without SHPO review. If BLM does not accept the findings, the Applicant will revise the report as necessary and resubmit it to the applicable BLM State Office within 5 days. The BLM will send the documentation to the SHPO in the annual report or through whatever mechanism is in place. The report data also will be included in any final report for the Undertaking.

B. If the inventory results in no historic properties identified, the Applicant will submit copies of the draft inventory report to the applicable BLM State Office for distribution to the appropriate Consulting Parties to this PA. Reviewers will provide any comments to the applicable BLM State Office within 10 days of receipt of the document. Any necessary changes to the report will be made by the Applicant and resubmitted to BLM within 5 working days. The BLM will send the report to the appropriate Consulting Parties for 5 days. The BLM will then send the documentation to the SHPO who will have 15 days to review and comment. The BLM will have 5 days to respond to any SHPO comments. If the SHPO does not respond within the stated timeframe, the BLM will assume SHPO has no objection to the report and concurs with the agency determination/s of eligibility. The BLM may issue the NTP or other applicable authorization to proceed at this point per Stipulation XII.

C. If the inventory results in historic properties identified, the Applicant will submit copies of the draft inventory report to the applicable BLM State Office to distribute the report, including the potential effects to any historic properties, to the appropriate

Consulting Parties to this PA. Reviewers will provide comments to the applicable BLM State Office within 30 days. Any changes to the report will be made by the Applicant and resubmitted to the appropriate Consulting Parties within 10 days. The BLM will then send the documentation to the SHPO who will have 30 days to review and comment. The BLM will have 10 days to respond to any SHPO comments. If the SHPO does not respond within the stated timeframe, the BLM will assume SHPO has no objection to the report and concurs with the agency determination/s of eligibility and finding of effect. The BLM may issue the NTP or other applicable authorization to proceed at this point per Stipulation XII.

XIV. Financial Security

The Applicant will post a financial security bond approved under the ROW regulations (43 CFR 2800) with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing the HPTPs, or other mitigated activities, as negotiated by the Applicant where they contract for services in support of this PA. Such costs may include, but are not limited to treatment; fieldwork; post-field analyses; research and report preparation; interim and summary reports preparation; the curation of documentation and artifact collections in a BLM-approved curation facility; and the repatriation and reburial of any human remains, sacred objects, or objects of cultural patrimony. The Applicant will post a financial security bond prior to BLM issuing an NTP for the construction segment where historic-property treatment is required.

A. The security bond posted is subject to forfeiture if the Applicant does not complete tasks within the time period established by the treatment selected provided, however, that the BLM and Applicant may agree, in writing, to extend any such time periods. The BLM will notify the Applicant that the security bond is subject to forfeiture and will allow the Applicant 15 days to respond before action is taken to forfeit the security bond.

B. BLM will release the financial security bond, in whole or in part, as specific tasks are completed and accepted by the BLM.

XV. PA Annual Report and Review

On or before February 1 of each year, until the Signatories and Invited Signatories agree in writing that the terms of this PA have been fulfilled, the Applicant shall prepare and provide an annual report to the BLM detailing how the applicable terms of the PA are being implemented. The BLM shall provide the annual report to all Consulting Parties for a 15 day review. The BLM may then host a conference call with the Consulting Parties to discuss the report. Annual reports shall not contain confidential site location information, per provisions of Stipulation VII.

XVI. Dispute Resolution

A. Other than the NRHP dispute resolution process identified in Stipulation II: E and E.4.c, should any Consulting Party to this PA object to the manner in which the measures stipulated in this PA are implemented, they shall provide written notice to the BLM of the reason for, and a justification of, the objection. Upon acceptance of such notice, the BLM shall consult for up to 30 days with the Consulting Parties to this PA to resolve the objection. If the BLM determines that the objection cannot be resolved, the BLM shall forward all documentation relevant to the dispute to the ACHP. Within 30 days after receipt of all pertinent documentation, the ACHP shall either:

1. Provide the BLM with recommendations, which the BLM shall take into account in reaching a final decision regarding the dispute; or

2. Notify the BLM that it will comment within an additional 30 days, in accordance with 36 CFR 800.7(c)(4). Any ACHP comment provided in response to such a request will be taken into account, and responded to, by the BLM in accordance with 36 CFR 800. 7(c)(4) with reference to the subject of the dispute.

B. B. Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute. The BLM's responsibility to carry out all actions under this PA that are not the subject of the dispute will remain unchanged.

XVII. Amendment

Any Signatory or Invited Signatory to this PA who signed the PA may request that the PA be amended by informing BLM in writing of the reason for the request and providing the proposed amendment language. The BLM shall notify all Consulting Parties to the PA of the proposed amendment, provide the proposed language and consult to reach agreement within 30 days unless the Signatories and Invited Signatories agree to a longer period of consultation or the party proposing the amendment retracts its proposal. The amendment will be effective on the date a copy signed by all the Signatories and Invited Signatories is filed by the BLM with the ACHP.

XVIII. Termination and Withdrawal

A. Any of the Signatories and Invited Signatories who have signed this PA may terminate it.

B. The termination process starts when a Signatory or Invited Signatory who has signed the PA provides written notice to the other Signatories and Invited Signatories of its intent to terminate. Termination shall take effect no less than 30 days after this notification, during which time the Signatories, Invited Signatories, and Concurring Parties shall consult to seek agreement on amendments or any other actions that would address the issues and avoid termination. The notice must explain in detail the reasons for the proposed termination. The PA will be terminated at the end of the 30-day period unless the Signatories and Invited Signatories agree to a longer period of consultation or the party proposing termination retracts its proposal.

C. In the event this PA is terminated, the BLM shall comply with 36 CFR 800.6 (c)(8) and will take reasonable steps to avoid adverse effects to historic properties until another PA has been executed or will request, take into account, and respond to ACHP comments, in accordance with 36 CFR 800.7 (c)(4). BLM will notify all Consulting Parties to this agreement as to the course of action it will pursue.

D. An individual SHPO may withdraw from the PA upon written notice to all Signatories and Invited Signatories after having consulted with them for at least 30 days to attempt to find a way to avoid the withdrawal. Upon withdrawal, the BLM and the withdrawing SHPO will comply with NHPA Section 106 in accordance with 36 CFR 800.3 through 800.7 or the execution of an agreement in accordance with 36 CFR 800.14(b). Such NHPA Section 106 compliance will be limited to consideration of effects of the Undertaking solely within the jurisdiction of the withdrawing SHPO. This PA will still remain in effect with regard to the portions of the Undertaking located in the jurisdiction of the SHPOs who have not withdrawn from the PA. If all SHPOs withdraw from the PA, the PA will be considered to be terminated.

XIX. Duration of This PA

A. This PA will expire if the Undertaking has not been initiated, the BLM ROW grant expires or is withdrawn, or the stipulations of this PA have not been initiated within 10 years from the date of its execution. At such time, and prior to work continuing on the Undertaking, the BLM must either (a) execute a Memorandum of Agreement pursuant to 36 CFR 800.6; execute a PA pursuant to 36 CFR 800.14(b); or request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. Prior to such time, the BLM may consult with the Consulting Parties to reconsider the terms of the PA and amend it in accordance with Stipulation XVII. The BLM shall notify the Consulting Parties within 30 days as to the course of action the BLM will pursue.

B. This PA will remain in full force and effect, not to exceed 15 years, unless terminated pursuant to Stipulation XVIII above, another agreement executed for the Undertaking supersedes it, or the Undertaking itself is cancelled. The BLM, in consultation with the other Signatories and Invited Signatories, will determine whether construction of all aspects of the Undertaking has been completed and that all terms of the PA have been fulfilled in a satisfactory manner. Upon a determination by the BLM that all terms of this PA have been fulfilled in a satisfactory manner, the BLM will notify the Consulting Parties to this PA in writing of the agency's determination. This PA will terminate and have no further force or effect on the day that the BLM so notifies the Consulting Parties to this PA.

By agreement of all Signatories and Invited Signatories, the duration of the PA may be extended through an amendment as per Stipulation XVII.

The BLM will retain responsibility for administering the terms and conditions of the ROW grant pertaining to historic properties for the life of the grant.

XX. General Provisions

A. Entirety of Agreement. This PA, consisting of 49 total pages, represents the entire and integrated agreement among the parties and supersedes all prior negotiations, representations and agreements, whether written or oral, regarding compliance with NHPA Section 106 for the Undertaking.

B. Prior Approval. This PA shall not be binding upon any party unless this PA has been reduced to writing before performance begins, as described under the terms of this PA, and unless the PA is approved as to form by the appropriate State Attorney General or his or her representative.

C. Severability. Should any portion of this PA be judicially determined to be illegal or unenforceable, the remainder of the PA shall continue in full force and effect, and any party may renegotiate the terms affected by the severance.

D. Sovereign Immunity. No state, SHPO, or tribal government waives their sovereign or governmental immunity by entering into this PA and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of the PA.

E. Indemnification. Each Signatory to this PA shall assume the risk of any liability arising from its own conduct. Each Signatory agrees they are not obligated to insure, defend, or indemnify the other Signatories to this PA.

F. Counterparts. This PA may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. The BLM will distribute copies of all pages to all Consulting Parties once the PA is executed in full.

G. All notices, requests, and other communications required or permitted hereunder between the Consulting Parties shall be in writing. All such notices, requests, and other communications shall be given (i) by delivery in person (ii) by a next day courier service, (iii) by first class, registered or certified mail, postage prepaid, or (iv) by electronic mail to the address of the Consulting Party as such party may specify in writing. All such notices, requests, and other communications shall be deemed to have occurred and be effective upon (i) receipt by the party to which notice is given, or (ii) the fifth (5th) day after having been sent, whichever occurs first.

EXECUTION of this PA and subsequent implementation of its terms shall evidence that the BLM and the federal agencies have taken into account the effects of the Undertaking on historic properties and afforded the ACHP an opportunity to comment on it in compliance with NHPA Section 106.

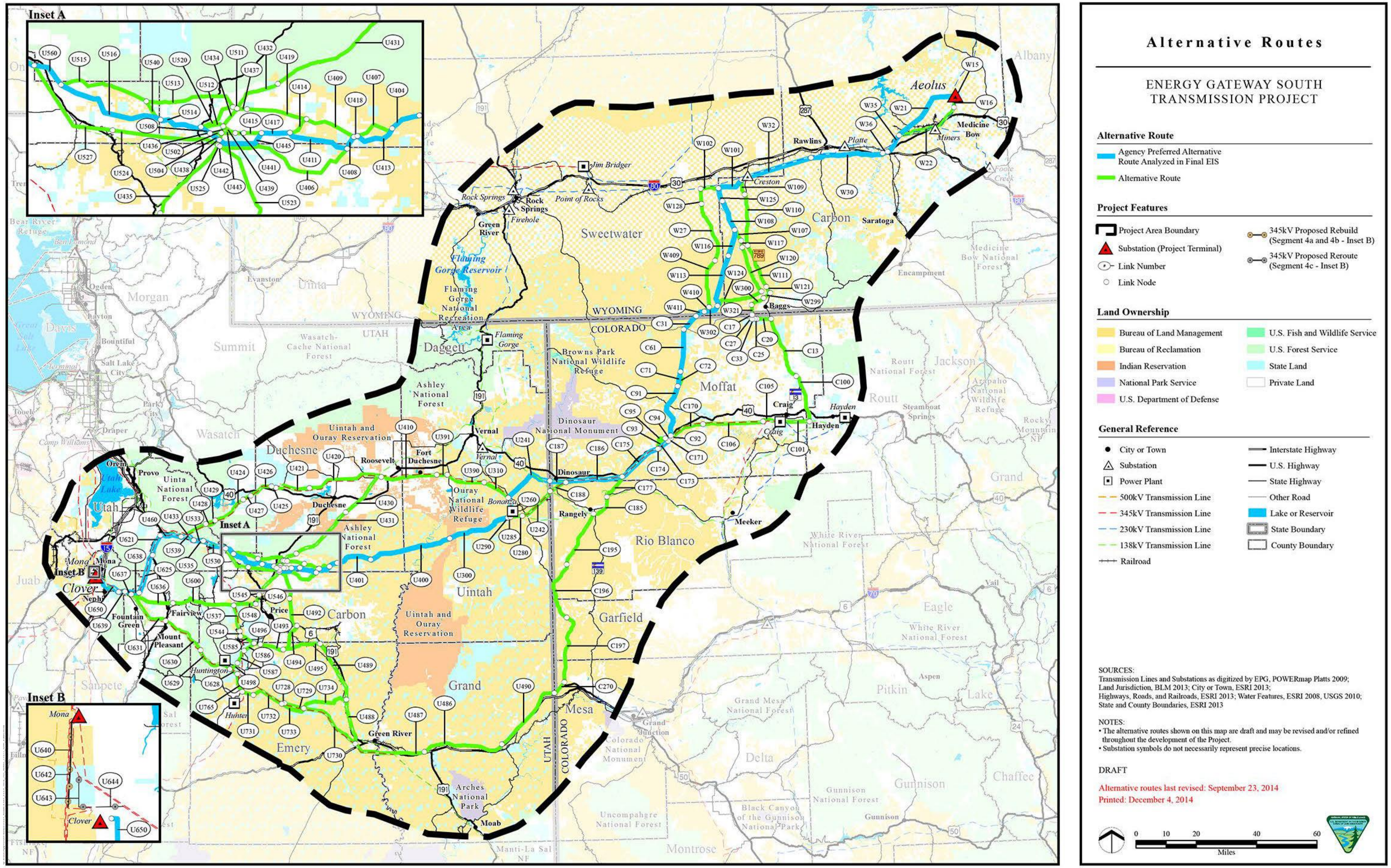
SIGNATORIES (reserved)

INVITED SIGNATORIES (reserved)

CONCURRING PARTIES (reserved)

APPENDIX A

MAP OF PROPOSED UNDERTAKING AND ALTERNATIVES



SOURCES:
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Land Jurisdiction, BLM 2013; City or Town, ESRI 2013;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

DRAFT

Alternative routes last revised: September 23, 2014
Printed: December 4, 2014

APPENDIX B

DEFINITIONS

1. *Adverse effect*. When an Undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association, consideration will be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register of Historic Places (National Register). Adverse effects may include reasonably foreseeable effects caused by the Undertaking that may occur later in time, be farther removed in distance or be cumulative (36 CFR 800.5(a)(1). Adverse effects on historic properties include, but are not limited to:

   - Physical destruction of or damage to all or part of the property;
   - Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, which is not consistent with the Secretary of the Interior's Professional Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
   - Removal of the property from its historic location;
   - Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
   - Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
   - Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
   - Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

2. *Area of Potential Effect (APE)*. The geographic area or areas within which an Undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16(d)).

3. *Class III Inventory*. A Class III inventory is an intensive, 100-percent pedestrian field survey to determine the distribution, number, location, and condition of historic properties in an area in order to determine effects and potential mitigation methods. A Class III inventory is used when it is necessary to know precisely what historic properties exist in a given area or when information sufficient for later evaluation and treatment decisions is needed on individual historic properties (Bureau of Land Management (BLM) Manual 8110).

4. *Concurring Parties*. Concurring Parties are Consulting Parties who have expressly agreed by signing this Programmatic Agreement (PA) to participate in the consultations and concur with the terms of the agreement for purposes of meeting the goals of historic preservation. Concurring Parties have only agreed to participate in the consultation process as outlined in the PA; it is understood that their participation does not necessarily imply an endorsement of the project in part or as a whole. Concurring Parties who refuse to concur in the agreement do not invalidate the agreement (36 CFR 800.6(c)(3)).

5. *Consulting Parties*. All required Signatories, Invited Signatories, and Concurring Parties.

6. *Construction*. The construction phase begins when the BLM has issued a right-of-way (ROW) grant to the proponent for the Undertaking. It includes all activities related to construction of the undertaking, including activities required to be completed in advance of construction, as well as all activities completed in order to reclaim lands disturbed during construction for 2 years after construction is completed or until cost recovery agreements related to construction expire.

7. *Cultural resource*. A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups (traditional cultural property). Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and using for public benefit described in the BLM Manual 8100. They may be, but are not necessarily, eligible for listing in the National Register.

8. *Cumulative effects*. The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes other actions (40 CFR 1508.7)

9. *Day(s)*. For the calculation of time periods under this PA, “days” means calendar days. Any time period specified in this PA that ends on a weekend or a state or federal holiday is extended until the close of the following business day.

10. *Effect*. An alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR 800.16(i)).

11. *Historic property*. Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. This term includes artifacts,

records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe and that meet the National Register criteria (36 CFR 800.16(l)(1). The phrase ‘eligible for inclusion in the National Register’ is used to refer to both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria as listed in 36 CFR 60.4.

12. *Historic Property(ies) Treatment Plan.* A document that details the procedures and techniques for resolving adverse effects to historic properties within the APE through avoidance, minimization, and/or mitigation. At the end of the Project, there would be a final report documenting all treatment completed in accordance with the HPTP.

13. *Literature Review*. A “literature review,” "existing data review," "file search," or "records check" is generally the brief first step before initiating a field survey. Ideally, completing an existing data review means consulting the automated database of the State Historic Preservation Offices (SHPOs), as well as the BLM or U.S. Forest Service (USFS) office records. The literature review provides information regarding whether any survey has been conducted and any cultural properties have been recorded within or near the project location.

14. *Monitoring*. Actions performed to ensure compliance with the terms, conditions, and stipulations of a grant. Actions include inspection, construction, operation, maintenance, and termination of permanent or temporarily facilities and protection and rehabilitation activities until the right-of-way (ROW) holder completes rehabilitation of the ROW and the BLM approves it. Monitoring for cultural resources may have different objectives depending on the phase of the project.

15. *National Historic Landmark (NHL)*. A district, site, building, structure or object, in public or private ownership, judged by the Secretary of the Interior to possess national significance in American history, archeology, architecture, engineering and culture, and so designated (36 CFR 65.3(h)).

16. *National Historic Trail (NHT)*. A trail or route designated by Congress as a National Historic Trail under the National Trails System Act of 1968 as amended. To qualify for designation as a national historic trail, a trail or route must be established by historic use and be historically significant as a result of that use; be of national significance; and have significant potential for public recreational use or historical interest based on historic interpretation and appreciation. Generally, they are extended trails of 100 or more miles in length that follow as closely as possible and practicable the original trails or routes of travel of national historical significance. National historic trails have as their purpose the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment.

17. *Notice to Proceed*. A written authorization by the lead federal agency that allows the ROW holder to initiate actions under the ROW grant. The lead federal agency can issue separate notices to proceed if the project involves distinct work phases and/or locations. Each notice to proceed will specify the nature of work, location, and dates to be authorized.
18. *Operations and Maintenance*. Activities associated with operation and maintenance of the approved ROW grant over the life of the ROW grant. This includes all activities related to the functioning of the Undertaking after construction and reclamation are completed and prior to any activities related to decommissioning of the Undertaking, per Stipulation XII. Activities during this this time are generally infrequent, predictable, and routine. Any actions not specifically approved in the ROW grant, such as changes in equipment used or actions outside the ROW require approval of the BLM.

19. *Plan of Action*. A document included in the HPTP that establishes procedures for ensuring the proper treatment of Native American remains and related grave goods encountered on federal lands pursuant to 43 CFR § 10.

20. *Plan of Development (POD)*. A plan of development includes the detailed construction, operation, rehabilitation, and environmental protection plan of the project. The project Applicant completes the POD, which is reviewed by the land-managing agencies.

21. *Property of traditional religious and cultural importance*. A property that is eligible for the National Register because of traditional religious and cultural importance to an Indian tribe. A 1992 amendment to the National Historic Preservation Act (NHPA, 54 U.S.C. § 306108 [as recodified]) directs that properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion on the National Register and that, in carrying out its responsibilities under Section 106 of the Act, a federal agency shall consult with any Indian tribe that attaches religious and cultural importance to such properties. This term also may appear as “properties of religious and cultural significance,” “properties of traditional religious and cultural significance,” “properties of cultural or religious importance,” or “properties of religious or cultural importance.”

22. *Reclamation*. The process of restoring lands disturbed during construction to, or as close to as practicable, their pre-construction condition, generally involving restoration of vegetation, soils and topography. Reclamation processes and practices are described in the POD and generally are to be completed no later than 2 years after construction is completed.

23. *Record of Decision (ROD)*. The public record made by the agency at the time of its decision which states what the decision was, identifies all alternatives considered by the agency in reaching its decision, specifies the alternative which was considered to be environmentally preferable, and states whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall be adopted and summarized where applicable for

any mitigation (40 CFR Part 1505.2). Until an agency issues a record of decision, no action concerning the proposal shall be taken that would (1) have an adverse environmental impact or (2) limit the choice of reasonable alternatives (40 CFR Part 1506.1).

24. *Segment*. Any of the parts into which something (i.e., transmission line) is separated; section.

25. *Setting assessment*. A methodology devised to determine the effects of an undertaking to those historic properties for which setting, feeling and/or association contribute to National Register eligibility.

26. *Signatories*. *Required signatories* execute, may amend, and may terminate this agreement. *Invited signatories* have the same rights to amend and terminate the agreement once they sign it per 36 CFR 800.6(c)(2).

27. *Targeted Field Inventory*. A targeted field inventory is a focused or special-purpose information tool that is less systematic, less intensive, less complete, or otherwise does not meet Class III inventory standards. Reconnaissance surveys may be used, among other purposes, for locating particular types of cultural resources, such as those for which setting, feeling, and association are important to their integrity. Fieldwork may be targeted to specific areas or types of locations in which such properties may exist, or to examine known cultural resources to determine whether they are significant and whether setting, feeling and/or association may be important to their significance.

28. *Traditional cultural property (TCP)*. A property that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community (National Register Bulletin 38). Although any cultural or community group may identify relevant traditional cultural properties, the regulations at 36 CFR 800 specifically require identification and evaluation of properties of traditional religious and cultural importance to Indian tribes.

29. *Variance*. A written authorization from the responsible agency permitting construction in a manner that departs from the specific requirements of the POD.

APPENDIX C

PROCEDURES FOR DETERMINING EFFECTS ON HISTORIC PROPERTIES FOR WHICH SETTING, FEELING, OR ASSOCIATION ARE ASPECTS OF INTEGRITY

1.0 INTRODUCTION

This methodology defines the procedures for identifying and evaluating effects from the Energy Gateway South Transmission Project (Undertaking) to historic properties within the indirect effects Area of Potential Effect (APE) for which the qualities of setting, feeling, or association are aspects of integrity and thereby characteristics that qualify these properties for eligibility for listing on the National Register of Historic Places (NRHP). The Bureau of Land Management (BLM), in consultation with the Advisory Council on Historic Preservation (ACHP); the Wyoming, Colorado, and Utah State Historic Preservation Officers (SHPOs); and Consulting Parties to the Programmatic Agreement (PA), has compiled these procedures, pursuant to Stipulations I.A.2. and II.E. of the PA.

The Applicant will produce separate reports that identify effects to setting, feeling or association for historic properties in Wyoming, Colorado, and Utah. The goal will be to include these reports as stand-alone addenda to the Class III inventory reports for each state. Each report will meet the reporting requirements of the BLM and the SHPO from each respective state.

The methodology involves four components. Within the APE for Indirect Effects (indirect effects APE) defined in Stipulation I.A.2. of the PA: (1) identify historic properties from which the Undertaking can be seen and for which setting, feeling, or association is an aspect of integrity; (2) complete field evaluations of the integrity of these historic properties; (3) assess effects on setting, feeling, or association of these historic properties; and (4) resolve adverse effects. Complete Components 1, 2 and 3 and include results in the Class III inventory report for the Undertaking; complete Component 4 and include in the Historic Properties Treatment Plan (HPTP). Each component of this methodology is addressed below. In addition to the following detailed description of each component, Exhibit 1 to this appendix is a field implementation guide intended to assist field personnel in implementing these procedures.

1.1 Definitions and Eligibility Criteria

For the purposes of this methodology, cultural resources are defined as archaeological, historical, or architectural sites, districts, buildings, structures, places, and objects that have been documented on the official site forms used by the SHPOs in the states of Wyoming, Colorado, and Utah; or listed on the NRHP or state registers of historic places; and additionally those properties identified by Consulting Parties in Stipulation II.D.2.a of the PA. Cultural resources include sites known to be important to tribes; for example, rock art, rock cairns, rock alignments, and stone circles. While cultural resources encompass definite locations (sites or places) of traditional cultural or religious significance to specified social and/or cultural groups (including traditional cultural properties), as in the definition in Appendix B of the PA, and are most readily identified by Consulting Parties from these groups bringing them forward, per Stipulation II.D.2.a of the PA.

Cultural resources eligible for listing on the NRHP are referred to as "historic properties." Historic properties must demonstrate importance in American history, architecture, archaeology, engineering, or culture. A historic property is considered significant in these categories if it possesses integrity of location, design, setting, materials, workmanship, feeling, and association and meets one or more of the following criteria:

> (a) is associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) is associated with the lives of persons significant in our past; or
>
> (c) embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) has yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

1.2 Integrity

Integrity is defined as "the ability of a property to convey its own significance" (National Park Service [NPS] 1995:44). According to NRHP guidelines, the evaluation of integrity must always be grounded "in an understanding of a property's physical features and how they relate to its significance" (NPS 1995:44). Setting, feeling, and association (also defined in NPS 1995:44-45) are particularly sensitive to visual, audible, and atmospheric effects and convey the property's historic character.

- **Setting** is the physical environment of a historic property. Setting encompasses the physical features of each historic property, in which the property played its historic role. It includes natural features such as topography and vegetation, and man-made features that are part of the property and the surrounding landscape.
- **Feeling** is a property's expression of the aesthetic or historic sense of a particular period of time. Do the physical features taken together convey the property's historic character? Does the property "feel" like it did during its historic period? Are the sights and sounds the same? Can you imagine the property during its period of significance? Examine the potential modern intrusions which may distract from the historic features and character of the property.

- **Association** is the direct link between an important historic event or person and a historic property (NPS 1995:44-45). Is there a direct link between the historic person or event and the historic property? Examine whether the place at which the event or activity occurred is sufficiently intact to convey the historic link or relationship to an observer.

All other terms not defined within this document are as defined in the PA.

1.3 Area of Potential Effect for Indirect Effects (Indirect Effects APE)

As described in Stipulation I. A. 2 of the PA, the indirect effects APE extends to the visual horizon or for 3 miles on either side of the transmission line centerline, whichever is closer. Where the indirect effects APE includes traditional cultural properties, properties of traditional religious and cultural importance, National Historic Landmarks, National Historic Trails, and other exceptional classes of historic properties for which setting, feeling, or association contributes to eligibility, additional analyses may be required and the indirect APE may be modified accordingly, following procedures described in I.B of the PA. Consulting Parties may identify cultural resources to consider in this analysis beyond the 3 mile indirect effects APE.

2.0 INVENTORY HISTORIC PROPERTIES FOR WHICH SETTING, FEELING OR ASSOCIATION IS IMPORTANT TO INTEGRITY

Identifying historic properties within the indirect effects APE for which setting, feeling, or association may be important to their integrity involves a two-step approach: (1) conducting a GIS viewshed analysis to identify areas in the indirect effects APE from which the Undertaking is visible and (2) compiling a list of historic properties within the potentially visible portion of the indirect effects APE for which setting, feeling, or association is anticipated to be an important quality of integrity. This two-step viewshed analysis screening approach effectively eliminates historic properties that are located within the indirect effects APE but have no view of the Undertaking or for which setting, feeling, or association is not an important quality of integrity. The NRHP eligibility screening eliminates cultural resources that do not meet the criteria for eligibility as set forth in the NRHP. The details of each step are discussed below.

2.1 Viewshed Analysis Screening

The BLM will require the Applicant to conduct a viewshed (seen-unseen) analysis (using geographic information system [GIS] technology) to generate a viewshed that represents the area of the Undertaking (especially transmission line towers) visible within the indirect effects APE. The Undertaking may be visible because of anticipated (1) landform modifications that are necessary to prepare a right-of-way for construction, (2) the removal of vegetation to construct and maintain a facility, and (3) the introduction of new above-ground elements into the landscape. Conduct the GIS viewshed analysis screening using the best and most current information available about these visibility factors at the time work begins for this report. Eliminate from further consideration all portions of the indirect effects APE from which the Undertaking is not visible.

2.2 NRHP Eligibility Screening

Within the visible portion of the indirect effects APE defined in 2.1, identify historic properties for which setting, feeling, or association contributes to integrity, based upon NRHP evaluations. Use existing cultural records databases at SHPO and federal land-management agencies to identify the pool of historic properties eligible under Criteria A, B, and/or C that fall within the indirect APE and that may be affected by the Undertaking. If eligibility criteria are not available or are incomplete in electronic databases, site types may be used to search within electronic databases for sites that are likely to be eligible under A, B, and/or C. For example, "historic structure" may be a starting place to search for historic properties eligible under A, B, and/or C without having to go through every paper site form to find these sites.

Include in this pool certain types of historic properties eligible under Criterion D and known to be important to tribes or other Consulting Parties, such as rock art, cairns, rock alignments or stone circles. The Consulting Parties are encouraged to define these kinds of sites, and also any specific sites that should be included, within 60 days after the Record of Decision (ROD) is signed, per Stipulation II.D.2.a of the PA. The BLM, in consultation with other involved land managing agencies and the applicable SHPO, may include historic properties eligible under Criterion D at its discretion. Along with those sites brought forward by Consulting Parties, which may need to be evaluated for National Register eligibility, the list of historic properties will include traditional cultural properties, properties of traditional religious and cultural importance, National Historic Landmarks, National Historic Trails, and sites identified as sacred or respected places during tribal consultation. Tribally sensitive information will not be shared with other Consulting Parties.

The focus of this identification effort is on historic properties likely to be determined eligible under criteria A, B, or C. Place high priority on areas of importance identified by Consulting Parties. Conversely, Consulting Parties should take care to identify places of importance to them in the indirect effects APE per Stipulation III.D.2.a. of the PA. Examples of properties likely to be determined eligible may include named roads or other named features. Examples of properties unlikely to be determined eligible may include unnamed roads and trails or other unnamed features, historic linear utilities (e.g., transmission or telegraph lines) recorded as historic sites, and historic mines or industrial sites where setting is unlikely to contribute to integrity.

Screening for Site Type: As a screening measure, the BLM, in consultation with the Consulting Parties, may define site types for which setting, feeling, or association are important to integrity, and may likewise define site types for which setting, feeling, or association are not important to integrity. In conjunction, site types for which audible or atmospheric effects are not important may be defined. The Applicant may propose definitions of such site types to the BLM at the beginning of the assessment. Describe these definitions in the report and remove historic properties screened out through this process from the list of historic properties to visit in the field.

Screening for Overall Integrity: In some instances, historic properties have been entirely destroyed or compromised to the extent that the site no longer meets the criteria for listing in the NRHP. If lack of integrity can be ascertained during the inventory process, these “historic properties” are no longer eligible and can be removed from the list of historic properties to visit in the field.

Screening for Setting, Feeling, or Association: If the identification of the historic property’s integrity of setting, feeling, or association has not been included in available documentation, the BLM in consultation with SHPOs, the Consulting Party who brought forward the historic property, and any other appropriate land-managing agency will determine the importance of these aspects of integrity to the historic property. This determination also will apply to places brought forward by Consulting Parties through Stipulation II.D.2.a. of the PA, which may not be present in SHPO or agency site files. Where possible, this determination will be made prior to completion of the field inventory. The BLM will share any such determinations with all Consulting Parties as part of the documentation for the Undertaking.

Access to Private Land: The Applicant will demonstrate a good-faith effort to acquire access to visit historic properties on private land beyond the direct effects APE. Historic properties on private land where access cannot be obtained for fieldwork will be assessed remotely.

Consideration of Audible and Atmospheric Effects: Identify places where construction activities will be longer in duration, or more extensive in scope, or where they may have more than typical audible and atmospheric effects. These “intensive construction locales” may include construction staging areas, areas prone to excessive noise or dust, or helicopter overflight areas near historic properties of concern for these indirect effects. In addition to the use of reference points for proposed transmission-line-structure locations to measure visual effects, include the locations of such places as reference places for assessing audible and atmospheric effects.

Geodatabase: Compile a geodatabase of all historic properties identified at the end of the inventory process in Sections 2.1 and 2.2 above (including historic properties identified during Class III inventories conducted for this Undertaking). This database will include the following information in tabular format: site location, Smithsonian site number (if available), source of the information, land ownership, site description, NRHP evaluation and nominating criteria, and additional reasons for inclusion (e.g., National Historic Trails, sacred sites, sites brought forward by Consulting Parties). Tribally sensitive information and site location information for sensitive sites will not be shared with other Consulting Parties.

GIS Screening in the Office: To verify that the Undertaking has an effect on the historic properties in the geodatabase prior to fieldwork, employ GIS methods in the office for visualizing features of the Undertaking such as using simulation analysis, as available through Google Earth “street view.” Using GIS in the office, assign a Cultural Key Observation Point (CKOP) to the center of each historic property in the geodatabase, and then conduct a GIS analysis of the Undertaking’s visibility using those CKOPs, as measured to the nearest reference reference point for proposed transmission-line-structure location(s) or intensive construction locale. The analysis should result in a simulated view of the landscape from each CKOP with the Undertaking in it. The agency archaeologist(s) and the Applicant will review these simulated views before going to the field so that they can identify historic properties where the effects of the Undertaking are clearly so minor that further inventory is not necessary. In the report and in the geodatabase, list historic properties dropped from further analysis because of no or very minor (no adverse) effects as identified through this process.

Simulation of Undertaking: Based on the GIS screening in the office, produce simulated images that show the anticipated Undertaking from each CKOP. Where field inventory is necessary, take these images to the field for reference, to help field crews visualize where the Undertaking will be located in relation to each historic property that will be visited.

2.3 List of Historic Properties for Field Evaluation

Historic properties that remain on the list after the viewshed analysis screening (Section 2.1 above) and NRHP eligibility screening (Section 2.2 above) are those for which setting, feeling, or association has been identified as important to their integrity. Schedule the tasks involved in inventorying and evaluating these properties with the goal of including the completed report as an addendum to the Class III inventory report. Next, assess potential visual, audible, or atmospheric effects from the Undertaking on these historic properties in the field.

3.0 FIELD EVALUATIONS

Complete the following analysis on historic properties identified for field inventory as a result of the screening done during the inventory stage (Beck et al 2012; BLM 2006, 2013a and b, 2014; Delaware State Historic Preservation Office 2003). Consult the National Register Bulletin's *How to Apply the National Register Criteria for Evaluation* (National Park Service [NPS] 1995) as the primary reference to assess setting, feeling, or association as they apply to eligibility and integrity. First, collect photographic data from each potentially affected historic property to document effect recommendations and, secondly, assess the effects on setting, feeling, or association using the attributes described below.

3.1 Overall Integrity Prior to the Undertaking

In the field, record and evaluate the National Register eligibility of cultural resources identified by Consulting Parties through Stipulation II.D.2.a. of the PA if they have not been previously recorded in SHPO site files and if BLM's review of the screening process under Section 2.0 above indicates that they need to be recorded. Include in eligibility recommendations an assessment of site integrity with emphasis on setting, feeling, and association. Document the rationale for eligibility recommendations in the report and on state site forms for these newly recorded sites, and include the site forms with the report.

If the field visit shows that a historic property has been destroyed or compromised to the extent that the historic property no longer meets the criteria for eligibility, document the site's present condition with a site-form addendum or a site-update form as required by the applicable SHPO; prepare and submit this documentation with the report. Evaluate whether historic properties that have been compromised but not destroyed since their last recording retain NRHP eligibility, with an emphasis on integrity of setting, feeling, and association. If not, eliminate these sites from further consideration, and document the "not eligible" recommendation in the report. No further assessment is required.

3.2 Photographic Data Collection

3.2.1 Establish Cultural Key Observation Points and Photograph Undertaking

At each historic property identified in Section 3.1 that is visited in the field and that retains integrity, establish at least one CKOP with a representative view of the Undertaking. Take sufficient photographs from the CKOP(s) at each historic property to document the view of the Undertaking from the CKOP. If a historic property is linear or large, or if there are several important features at the property, more than one CKOP may be needed. Position the camera at each CKOP to capture the viewshed from the historic property facing the proposed transmission-line structure(s) or intensive construction locale. In addition, take photographs in the four opposite or perpendicular directions from each CKOP that best demonstrate the existing setting in relation to the Undertaking. Record the camera height and aspect and the global positioning system (GPS) location for each CKOP. Use an appropriate lens and the same model of camera and camera lens, or cameras and lenses with the same resolution and image quality at all CKOPs. Note in the report the camera and lens model used.

3.2.2 Visual Modeling and Simulations

After fieldwork, superimpose all visible and proposed components of the Undertaking onto a representative image or images from each historic property. If visual simulations are not effective or obtainable, GIS modelling may be used. Simulations will be to scale in proper geographic locations and with appropriate component elevations and heights. The result of these simulations or models will be a graphical illustration of the potential visual impacts of the Undertaking on each potentially affected historic property.

The visual simulations or models document the visibility of the Undertaking from the historic property; include them in the report. Complete the assessment described in Section 3.3 below in the field, at the historic property and also consider effects from atmospheric or audible elements at historic properties near intensive construction locales in the field.

3.3 Analyzing Effects on Setting, Feeling or Association

Systematically identify and analyze effects on the integrity of setting, feeling, and association at each historic property, as assessed in the field and documented with with photographs, visual simulations, and models. Employ the following criteria to describe the effects of the Undertaking on each historic property and document the results for each historic property. If possible, an agency archaeologist should be in the field with the cultural resource consultant so that effect recommendations can be made jointly.

Integrity of Setting, Feeling, or Association

For the assessment of integrity, the setting, feeling, and association of the historic property are the main concerns. Assess the historic property's integrity of setting, feeling, and association considering the simulations of the Undertaking; i.e., assuming the Undertaking is in place, as follows:

High. The historic property retains its integrity. The introduction of the Undertaking leaves the setting, feeling, and association intact and relatively untouched.

Low. The historic property retains few aspects of integrity. The introduction of the Undertaking leaves the setting, feeling, and association severely compromised or lacking in the historic property's ability to convey its significance.

Distance

Distance is the actual distance between the historic property and the Undertaking. Because areas that are closer potentially have a greater effect on the observer, they draw greater attention than areas farther away. Using GIS measurements record the distance from each CKOP to the closest visible reference tower or intensive construction locale of the Undertaking. In the field, record the number of towers visible from each CKOP.

Contrast

Assess contrast by comparing the Undertaking features with the major elements in the existing setting, including topography, vegetation, and man-made features. Use the basic design elements of form, line, color, and texture to make this comparison and to describe the visual contrast anticipated to be created by the Undertaking. Follow the guidelines in BLM's Visual Resource Contrast Rating Handbook H-8431-1 for making the visual contrast rating and use the Visual Contrast Rating Worksheet in the current Wyoming protocol Appendix C (BLM 2014a); record the date and time of day of the rating. If possible, complete the visual contrast rating at the time of day and year and under light and vegetation conditions that are representative of when most people are likely to see the Undertaking from the historic property. Append the Visual Contrast Rating Worksheets for each historic property to the site form.

No Contrast. The undertaking cannot be seen at all.

Weak Visual Contrast. The elements of the Undertaking, or portions of the elements, can be seen but will not dominate the setting or attract the attention of the casual observer.

Moderate Contrast. The elements of the Undertaking tend to stand out in the setting.

Strong Contrast. The elements of the Undertaking clearly dominate the setting.

Cumulative Effects

For the purposes of this document and paraphrasing the National Environmental Policy Act definition (40 CFR 1508.7), cumulative effects on historic properties are the effects that result from the incremental impact of the Undertaking when added to other past, present and reasonably foreseeable future undertakings regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Assess cumulative effects as follows in relation to past, present and reasonably foreseeable future undertakings:

Project Compatible. Multiple or large industrial features or developments have appeared in the surrounding landscape. These features dominate the setting, feeling and association; the Undertaking does not create a striking contrast.

Project Moderately Compatible. Single or small industrial features or developments have appeared in the surrounding landscape. These other features are visible on the landscape but the Undertaking dominates the setting, feeling, and association.

Project Incompatible. No other industrial or developmental features appear in the surrounding landscape. The Undertaking creates a striking contrast that is incompatible with the setting, feeling, and association.

Results of Analysis

Support recommendations regarding effects on the setting, feeling, and association of each historic property in the report with photographs from CKOPs, showing visual simulations of the Undertaking and analysis of the attributes described above using forms or other means of record keeping. Submit these records, along with site form updates as required, as an appendix to the report; they eventually will be integrated into SHPO cultural resources site files.

4.0 ASSESSMENT OF EFFECTS ON SETTING, FEELING, OR ASSOCIATION

Adverse effects on historic properties may occur from a “change of the character of the property’s use or of physical features within the property’s setting that contribute to its historic significance (36 CFR 800.5(a)(2)(iv),” including “visual, atmospheric, or audible intrusions” (Advisory Council on Historic Preservation 2014). The primary question to be addressed is “can the setting, feeling or association of the property continue to effectively convey its historic significance despite the effect of the Undertaking?”

Planning the Undertaking provides the opportunity to avoid and minimize effects on historic properties. Avoidance is the preferred strategy for eliminating effects on historic properties. Avoidance methods may include, but are not limited to, “screening” the transmission line by moving it behind a hill, moving transmission-line structure locations, and realigning proposed access routes. Minimizing adverse effects may include camouflaging or reducing the reflective qualities of materials used in construction; feathering, tapering, or selective planting of native vegetation along cleared areas; and using existing roads as access roads, as outlined in the Draft Environmental Impact Statement for the Undertaking (BLM 2014b).

4.1 Recommendation of Adverse Effect

Under 36 CFR 800.5(a)(1), an adverse effect is found when an undertaking alters "directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

4.2 Recommendation of No Adverse Effect

An effect on setting, feeling, or association, whether direct or indirect or a combination of the two, does not automatically call for an "Adverse Effect" recommendation. Under 36 CFR 800.5(b)(3), if an effect caused by the Undertaking does not meet the criteria for adverse effect in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed, so the adverse effect criteria are not met, then a recommendation of "no adverse effect" is warranted. In other words, the effect may not compromise the integrity of the historic property to such an extent that it diminishes said integrity or causes an adverse effect.

4.3 Recommendation of No Effect

A recommendation of "No Effect" means that the undertaking cannot be seen or heard from the historic property or its effects on the integrity of the historic property are so minor as to be negligible.

5.0 RESOLUTION OF ADVERSE EFFECTS

As outlined in the PA at Stipulation VII., a HPTP will be prepared after the ROD is signed, the Undertaking's footprint is finalized, and the Class III inventory report is completed. All historic properties that will be adversely affected by the Undertaking will be reviewed and addressed individually within the HPTP. Include recommendations for minimizing adverse effects on setting, feeling, and association in the report and in the HPTP.

The avoidance and minimization measures described in Section 4.0 may not be viable options in all cases of adverse effects on setting, feeling and association. Where on-site mitigation of visual effects cannot be achieved, develop alternative mitigation measures following the process spelled out in the PA, Stipulation VII.A.5. and include them in the HPTP.

6.0 POST-CONSTRUCTION RE-EVALUATION

After construction is complete, revisit each historic property evaluated in the field prior to construction, re-photograph it, and re-evaluate its integrity and the effects of the Undertaking.

Describe whether construction impacts are likely to be temporary or permanent. Report pre- and post-construction integrity and effect evaluations as a stand-alone report required by the HPTP.

7.0 REVISIONS TO PROCEDURES

Revisions to the procedures described above may be proposed and accepted through review by the BLM and the Consulting Parties without amendment of the PA.

8.0 REFERENCES

Advisory Council on Historic Preservation
2014 Section 106 Regulations, Flow Chart, Explanatory Material. Accessed online at: http://www.achp.gov/flowexplain.html.

2004 36 CFR Part 800 – Protection of Historic Properties. Accessed online at: http://www.achp.gov/regs-rev04.pdf.

Beck, R. Kelly, Nicci Barger, Lindsey Kester, and Tanya Johnson
2012 Assessing the Visual Effects of Wind Generation Facilities on Historic Properties for National Historic Preservation Act Consultation. SWCA, Inc., Salt Lake City, Utah. Poster presented at the American Wind Energy Association's WINDPOWER conference, Atlanta.

Bureau of Land Management
2013a Methodology for Assessing Visual Effects to Historic Properties Along the Proposed Sigurd to Red Butte No. 2 – 345V Transmission Project. On file at the BLM Cedar City Field Office, Cedar City, Utah.

2014a Appendix C Guidelines for Determination of Visual Effects of an Undertaking on the Integrity of a Historic Setting in *Protocol between the Wyoming BLM State Director and the Wyoming State Historic Preservation Officer.* Accessed online at: http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/cultural/protocol.Par.9857.File.dat/2006app_c.pdf.

2014b Draft Environmental Impact Statement and Land Use Plan Amendments for the Energy Gateway South Transmission Project. Wyoming State Office. Cheyenne, Wyoming. February.

2014b Handbook H-8431 – Visual Resource Contrast Rating. Accessed online at: http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.79462.File.dat/8431.pdf.

Delaware State Historic Preservation Office
2003 *Assessing Visual Effects on Historic Properties*. Delaware State Historic Preservation Office, Dover, Delaware. Accessed online at: http://history.delaware.gov/pdfs/visualeffects.pdf.

National Park Service
1995 *How to Apply the National Register Criteria for Evaluation*. National Park Service, Washington, D.C. Accessed online at: http://www.nps.gov/history/nr/publications/bulletins/pdfs/nrb15.pdf.

EXHIBIT 1. FIELD IMPLEMENTATION GUIDE PROCEDURES FOR DETERMINING EFFECTS TO HISTORIC PROPERTIES FOR WHICH SETTING, FEELING, OR ASSOCIATION ARE ASPECTS OF INTEGRITY

Purpose: To summarize the procedures for identifying and evaluating effects from the Energy Gateway South Transmission Project (Undertaking) on historic properties within the indirect effects Area of Potential Effects (APE)), for which the qualities of setting, feeling, or association are aspects of integrity, as defined in Appendix C of the Programmatic Agreement (PA). This field guide is intended as a quick reference for carrying out the procedures described in Appendix C.

Step 1: Define Indirect Effects APE and Conduct Viewshed Analysis:
The Undertaking's indirect effects APE extends to the visual horizon or a maximum of 3 miles on either side of the transmission line centerline, whichever is closer. Use a geographic information system (GIS) viewshed analysis to model the viewshed surrounding the Undertaking and refine the APE to include only areas where the Undertaking can be seen.

Step 2: Conduct a File Review–Screen for NRHP Eligibility:
Examine existing records for all sites in the refined APE to identify known sites that may be sensitive to visual effects. Sites that are eligible for the National Register of Historic Places (NRHP) under Criterion A, B, or C are considered potentially sensitive. Sites that are eligible only for their data potential (i.e., Criterion D) may be considered for analysis by the BLM in consultation with other applicable land managing agencies and the State Historic Preservation Officer (SHPO). Place a high priority on areas identified by Consulting Parties, even if outside the indirect effects APE. They have 60 days after the Record of Decision (ROD) is signed to provide this information. Site types may be used to search for sites that are likely to be eligible under A, B, and/or C. Screen site types for those for which setting, feeling, or association are important.

Step 3: Verify Site Integrity:
A site must retain integrity of setting, feeling, or association to be sensitive to effects caused by the Undertaking. Screen out sites that no longer possess integrity; i.e., have been destroyed or damaged to the extent that their integrity is compromised. If integrity of setting, feeling, or association has not been included in site documentation, determine the importance of these aspects to the historic property.

Outcomes: Steps 1 through 3 should result in a geodatabase of historic properties sensitive to integrity of setting, feeling, and/or association and visible from the Undertaking. Begin to compile this geodatabase as soon as the ROD is signed and a right-of-way (ROW) for the Undertaking is approved.

Step 4: Check Visual Simulations in the Office Prior to Fieldwork:
Employ GIS (for example, Google Earth “street view”) to visualize the Undertaking from the historic properties. In the office, assign Cultural Key Observation Points (CKOPs) at the center of historic properties in the geodatabase, then conduct a GIS analysis of the Undertaking’s visibility using those CKOPs. Identify intensive construction locales that may be important for assessing audible and atmospheric effects. View the simulated Undertaking’s nearest reference tower or intensive construction locale from the historic properties to screen out those historic properties where the effects of the Undertaking are clearly so minor that a field visit is not necessary. Compile a list of the historic properties eliminated by this process.

Produce computer-generated simulations that show the Undertaking from each CKOP. Take these images to the field for reference to help visualize where the Undertaking will be located in relation to each historic property that will be visited.

Outcome: Step 4 should result in a list of historic properties to evaluate in the field for effects from the Undertaking.

Step 5: Fieldwork–Visit Historic Properties to Verify Eligibility:
Use the National Register Bulletin’s *How to Apply the National Register Criteria for Evaluation* (National Park Service [NPS] 1995) as the primary reference to assess setting, feeling, or association as they apply to eligibility and integrity.

Record and recommend the National Register eligibility of cultural resources identified by Consulting Parties if they have not been previously recorded. Include an assessment of site integrity (setting, feeling, and association) with eligibility recommendations.

If a historic property has been destroyed or compromised to the extent that it is no longer eligible, document the site’s present condition with a site update and re-evaluate the historic property’s eligibility.

Outcome: Step 5 should result in a final list of historic properties to be field-evaluated for effects to setting, feeling, and association.

Step 6: Fieldwork–Take Photographs Before Construction:
At each historic property visited, establish at least one field CKOP representing a typical view of the Undertaking. If a historic property is large or linear, or if there are several important features at the property, more than one CKOP may be needed. Photograph the proposed Undertaking location from the CKOP. Take photos in the four opposite or perpendicular directions from each CKOP. Record camera height and aspect and GPS location for each CKOP. Use an appropriate lens; use the same camera and the same lens (or model of camera and lens) for all sites; include camera and lens information in report.

After fieldwork, superimpose all components of the Undertaking onto the photographic images to scale in proper geographic locations and with appropriate component elevations.

Step 7: Fieldwork–Analyze Effects on Setting, Feeling, or Association:
While referring to the simulations created in Step 4, evaluate the effect of the Undertaking using a visual assessment worksheet. Include at a minimum assessments of the following attributes: site integrity (setting, feeling, or association), distance, contrast, and cumulative effects.

Follow the guidelines in the BLM's Visual Resource Contrast Rating Handbook H-8431-1 for making the visual contrast rating, and use the Visual Contrast Rating Worksheet in the current Wyoming protocol Appendix C (BLM 2014), including recording the date and time of day of the rating. Recommend how contrast can be minimized.

Outcome: Steps 6 and 7 should result in recommendations regarding effects on the setting, feeling and association of each historic property documented with photographs from CKOPs showing visual simulations of the Undertaking, and written analysis of the attributes described above. Submit these records, along with site-form updates, with the report.

Step 8: Assess Effects on Setting, Feeling, or Association:
Address the primary question "can the setting, feeling or association of the property continue to effectively convey its historic significance despite the effect of the Undertaking?"

Recommend No Effect, No Adverse Effect, or Adverse Effect: An effect on setting, feeling, or association does not automatically call for an "Adverse Effect" recommendation. If an effect caused by the Undertaking does not meet the criteria for adverse effect in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed so the adverse effect criteria are not met, then recommend "no adverse effect." In other words, the effect may not compromise the integrity of the historic property to such an extent that it diminishes the integrity or causes an adverse effect.

Outcome: Step 8 should result in recommendations of effect for each historic property visited.

Step 9: Recommend Ways to Resolve Adverse Effects:
Avoidance is the preferred strategy for eliminating effects on historic properties. Avoidance methods include "screening" the transmission line by moving it behind a hill, moving transmission-line structure locations, and realigning proposed access routes. Minimizing adverse effects includes camouflaging or reducing the reflective qualities of construction materials, tapering or selective planting of native vegetation in cleared areas, and using existing access roads. Where on-site mitigation of visual effects cannot be achieved, alternative mitigation measures will be developed.

Address each historic property with adverse visual, auditory, or atmospheric effects from the Undertaking in the HPTP, which will be prepared after the ROD is signed, the Undertaking's footprint is finalized and the Class III inventory report is completed. Recognize that it may not be possible to resolve adverse effects on site and alternative mitigation may be required.

Outcome: Step 9 should result in a recommendation for resolving adverse effects for each historic property whose integrity of setting, feeling, or association will be adversely affected.

Step 10: **After Construction is Completed**:
Revisit each historic property visited in Step 7. Re-photograph and re-evaluate integrity and effects. Report pre- and post -construction integrity and effect evaluations with photos as a stand-alone report required by the HPTP.

Outcome: Step 10 should result in a post-construction check on the pre-construction integrity evaluations. This will help determine whether the process outlined above is working adequately.

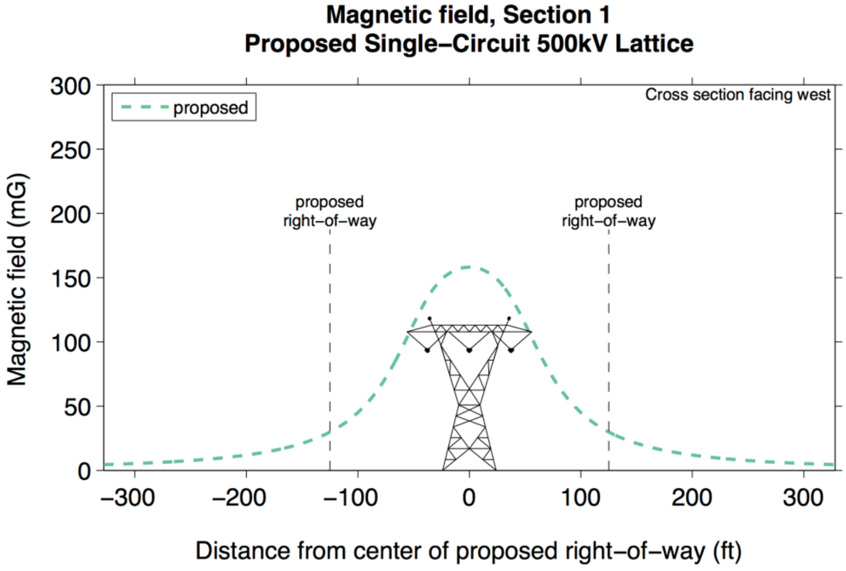
Appendix O

Calculated Electric and Magnetic Fields, Audible Noise Levels, and Radio Noise Levels

APPENDIX O – CALCULATED ELECTRIC AND MAGNETIC FIELDS, AUDIBLE NOISE LEVELS, AND RADIO NOISE LEVELS

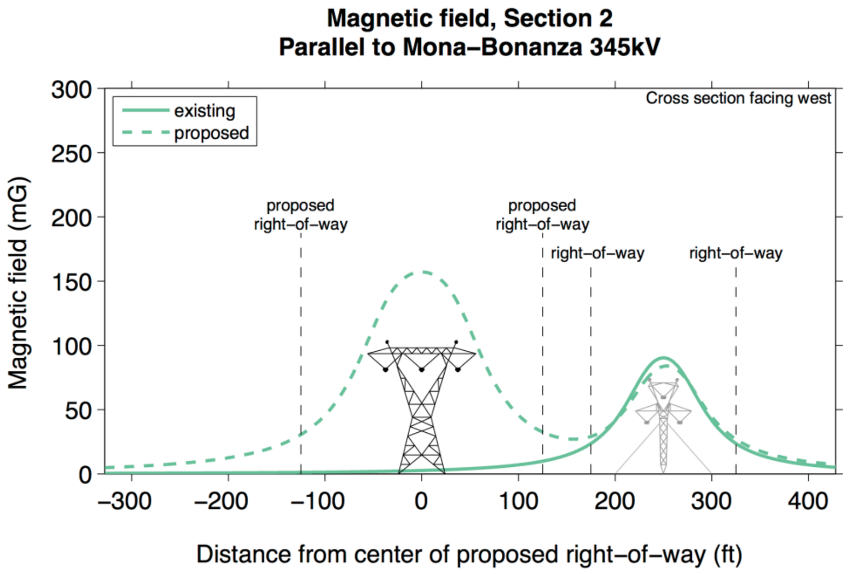
Appendix O contains diagrams (Figures O-1 through O-16) and tables (Tables O-1 through O-10) referenced in Chapter 3, Section 3.2.23. Diagrams illustrate calculated profiles for electric fields, magnetic fields, audible noise, and radio noise modeled for four locations (modeled cross-sections 1 to 4). The diagrams represent the existing and proposed transmission line configurations on the alternative routes analyzed in this document. Tables O-1 through O-10 identify calculated magnetic field levels for average- and peak-load conditions, electric-field levels, and audible noise for the modeled cross sections.

O.1 Magnetic Field Profiles



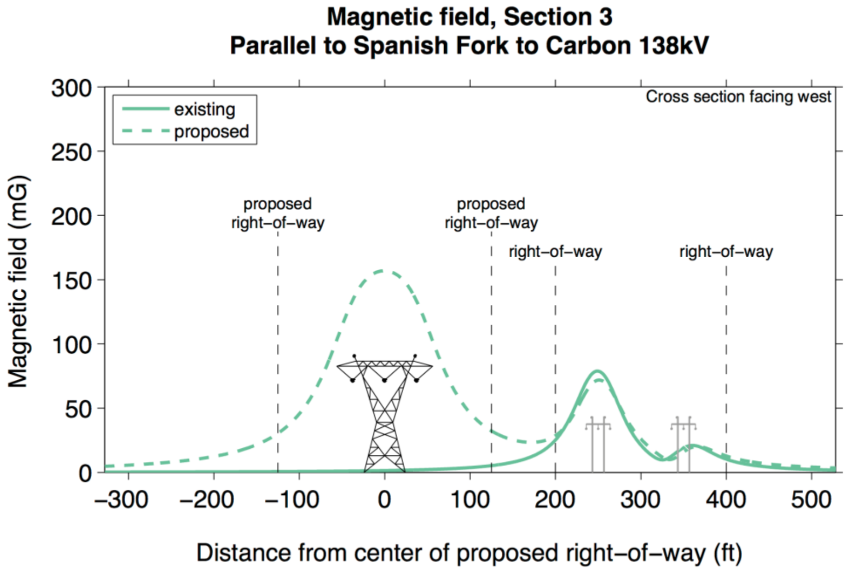
NOTE: Calculated magnetic field profile (resultant) under average-load conditions on the proposed 250-foot right-of-way in cross-section 1 (refer to Modeled Cross Sections under Section 3.2.23.3).

Figure O-1 Calculated Magnetic Field, Average Load in Cross-section 1



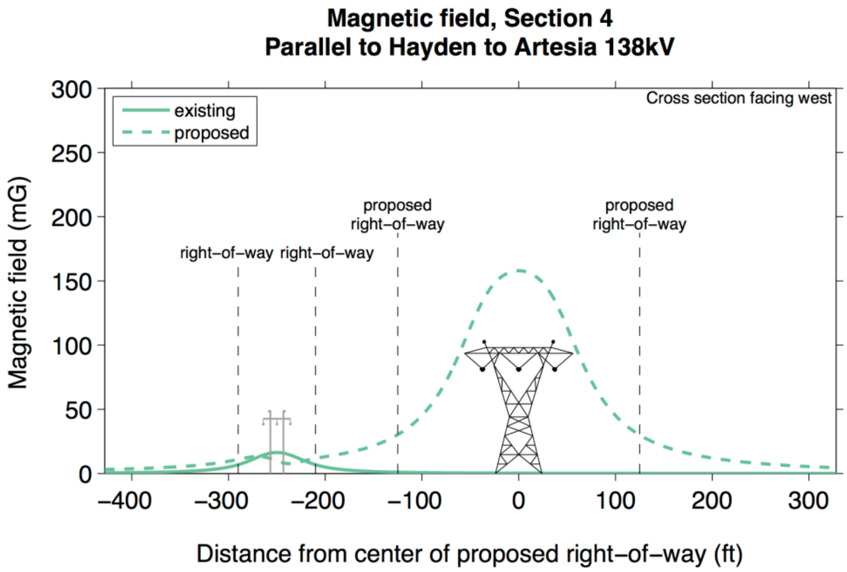
NOTE: Calculated magnetic field profile (resultant) under average-load conditions on the proposed 250-foot right-of-way in cross-section 2, parallel to the existing Mona-Bonanza 345-kilovolt (kV) transmission line (refer to Modeled Cross Sections under Section 3.2.23.3). The existing profile is calculated based on 2012 operational data for the Mona-Bonanza transmission line. The proposed profile includes the same load conditions as in the existing configuration, with all transmission facilities proposed as part of the Project in operation.

Figure O-2 Calculated Magnetic Field, Average Load in Cross-section 2



NOTE: Calculated magnetic field profile (resultant) under average-load conditions on the proposed 250-foot right-of-way in cross-section 2, parallel to the existing Spanish Fork-Carbon 138kV transmission lines (refer to Modeled Cross Sections under Section 3.2.23.3). Spanish Fork-Carbon #1 is located to the north, right in the figure. The existing profile is calculated based on 2012 operational data for the Spanish Fork-Carbon #1 and #2 transmission lines. The proposed profile includes the same load conditions as in the existing configuration, with all transmission facilities proposed as part of the Project in operation.

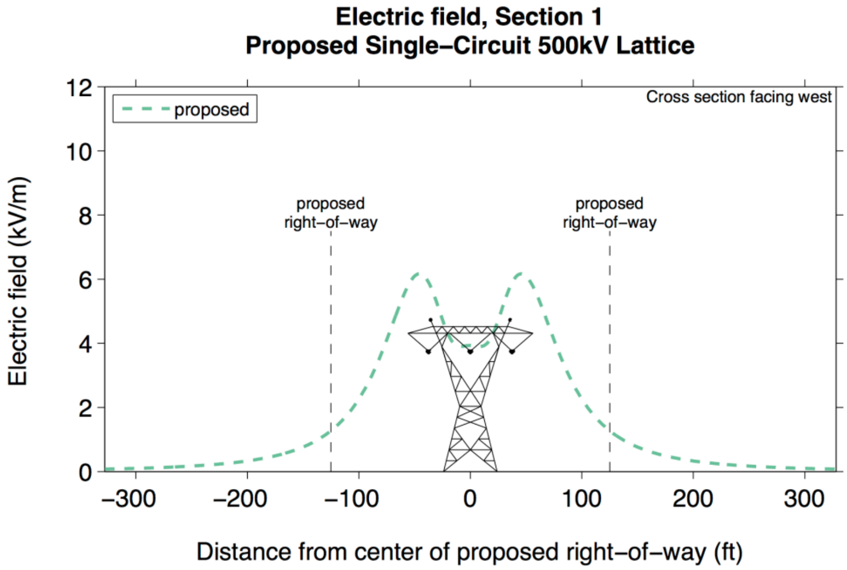
Figure O-3 Calculated Magnetic Field, Average Load in Cross-section 3



NOTE: Calculated magnetic field profile (resultant) under average-load conditions on the proposed 250-foot right-of-way in cross-section 2, parallel to the existing Hayden-Artesia 138kV transmission line (refer to Modeled Cross Sections under Section 3.2.23.3). The existing profile is calculated based on 2012 operational data for the Hayden-Artesia transmission line. The proposed profile includes the same load conditions as in the existing configuration, with all transmission facilities proposed as part of the Project in operation.

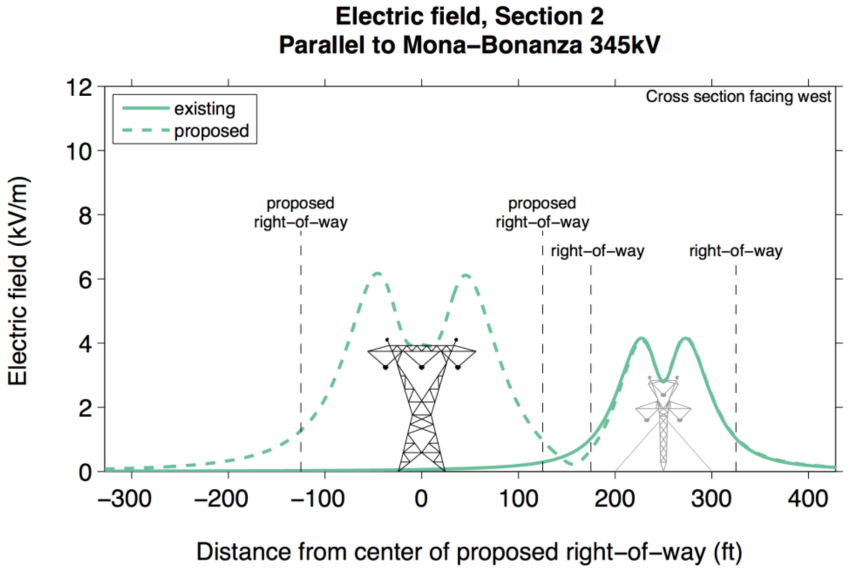
Figure O-4 Calculated Magnetic Field, Average Load in Cross-section 4

O.2 Electric Field Profiles



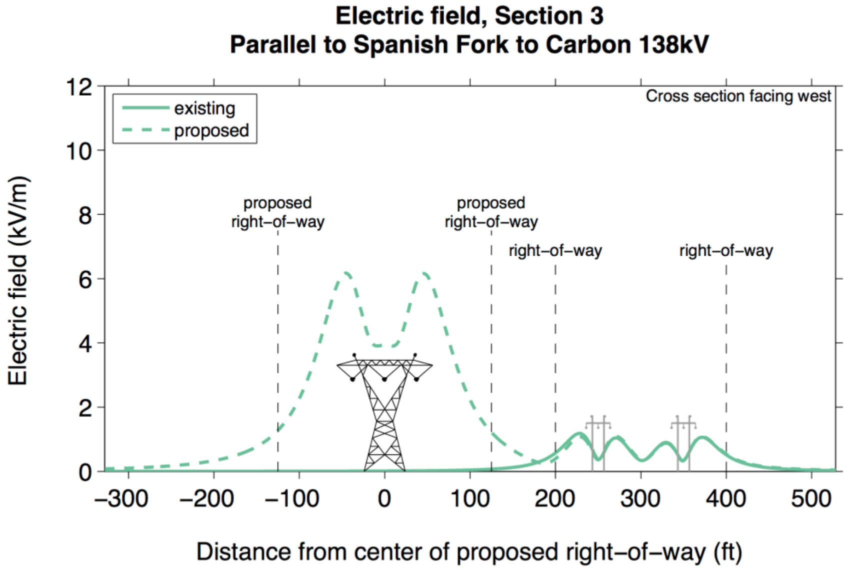
NOTE: Calculated electric field profile in modeled cross-section 1 (refer to Modeled Cross Sections under Section 3.2.23.3).

Figure O-5 Calculated Electric Field in Cross-section 1



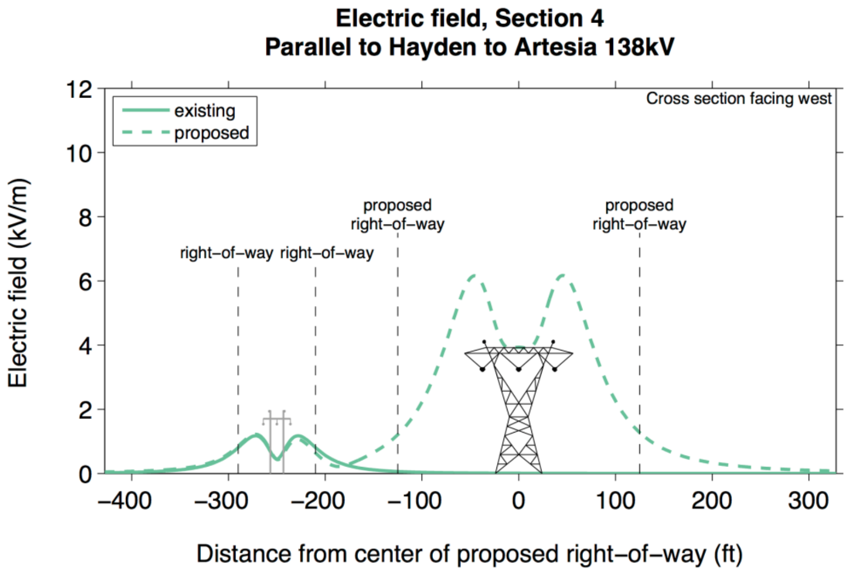
NOTE: Calculated electric field profiles in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

Figure O-6 Calculated Electric Field in Cross-section 2



NOTE: Calculated electric field profiles in modeled cross-section 3 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

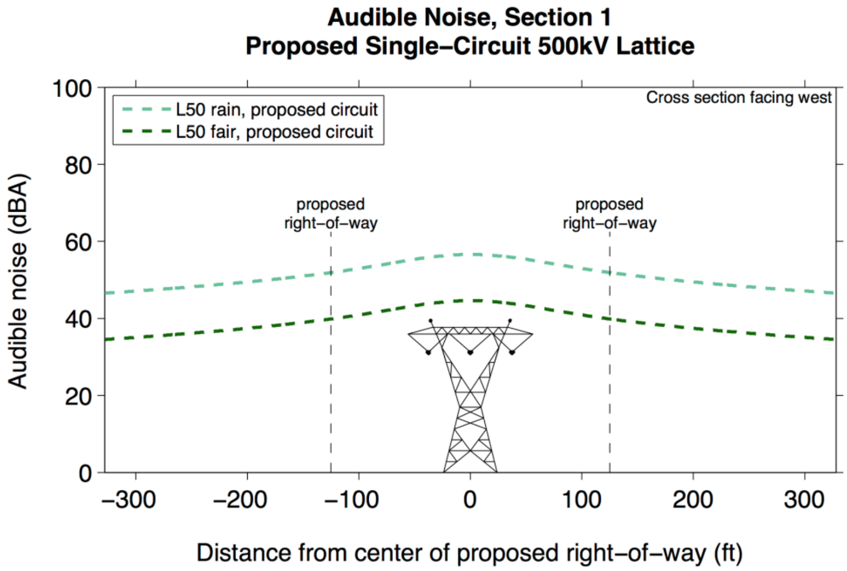
Figure O-7 Calculated Electric Field in Cross-section 3



NOTE: Calculated electric field profiles in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

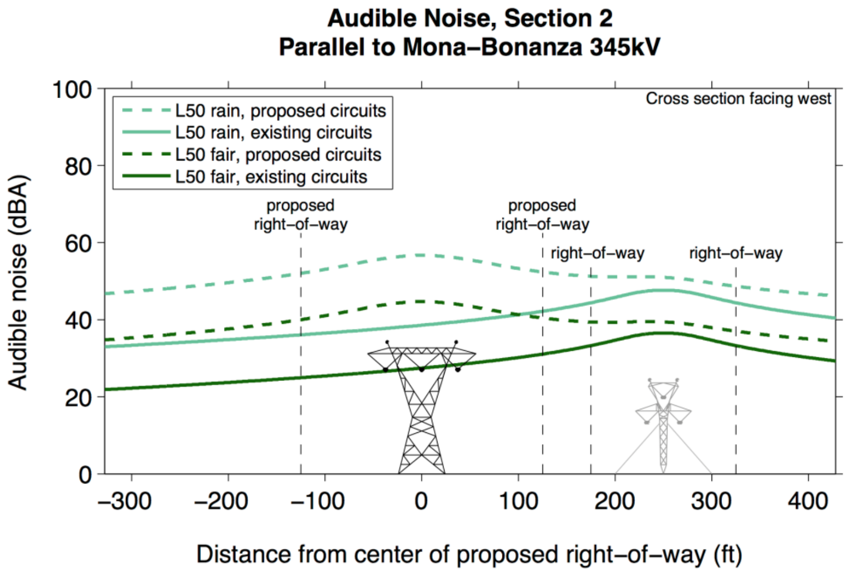
Figure O-8 Calculated Electric Field in Cross-section 4

O.3 Audible Noise Profiles



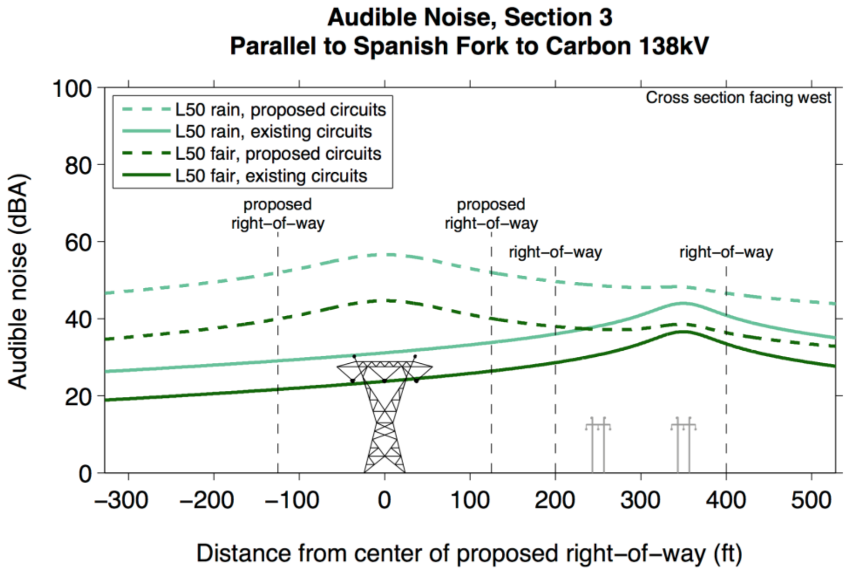
NOTE: Calculated audible noise profiles in modeled cross-section 1 (refer to Modeled Cross Sections under Section 3.2.23.3).

Figure O-9 Calculated Audible Noise in Cross-section 1



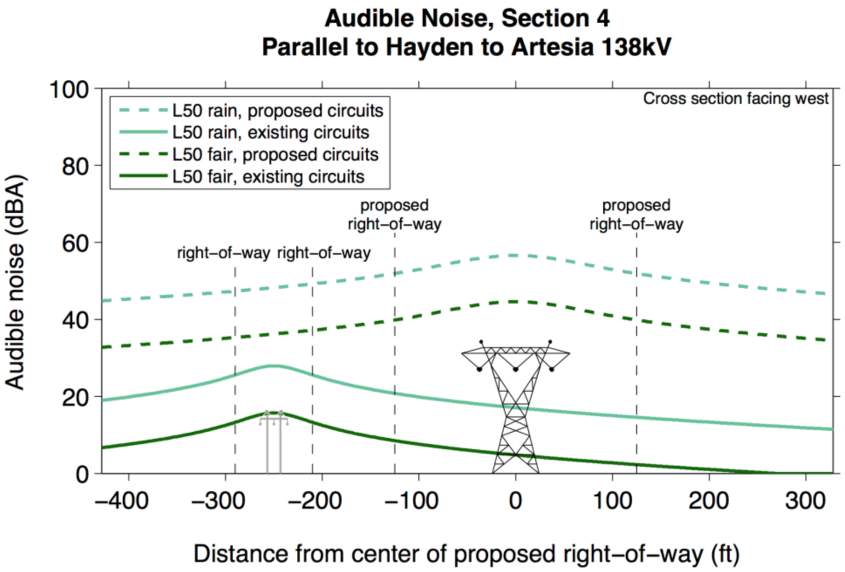
NOTE: Calculated audible noise profiles in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

Figure O-10 Calculated Audible Noise in Cross-section 2



NOTE: Calculated audible noise profiles in modeled cross-section 3 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

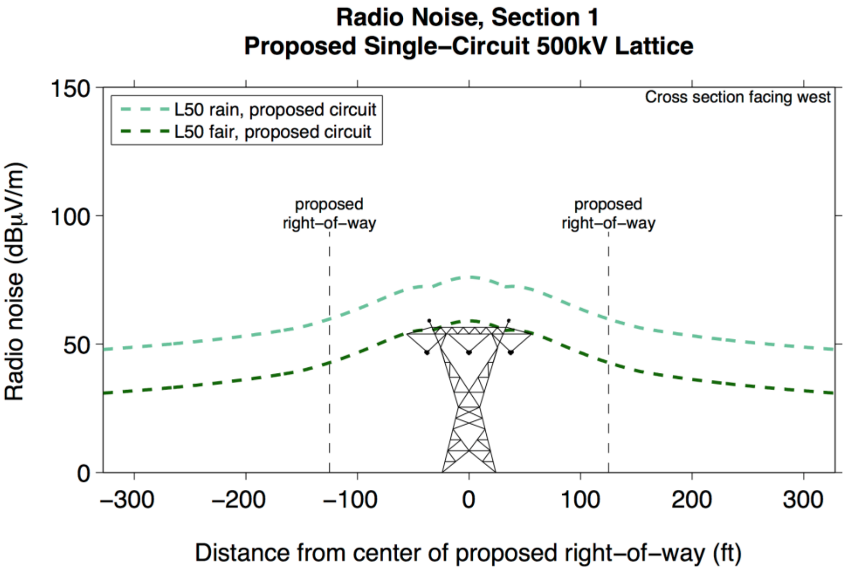
Figure O-11 Calculated Audible Noise in Cross-section 3



NOTE: Calculated audible noise profiles in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.23.3), before and after operation of the Project.

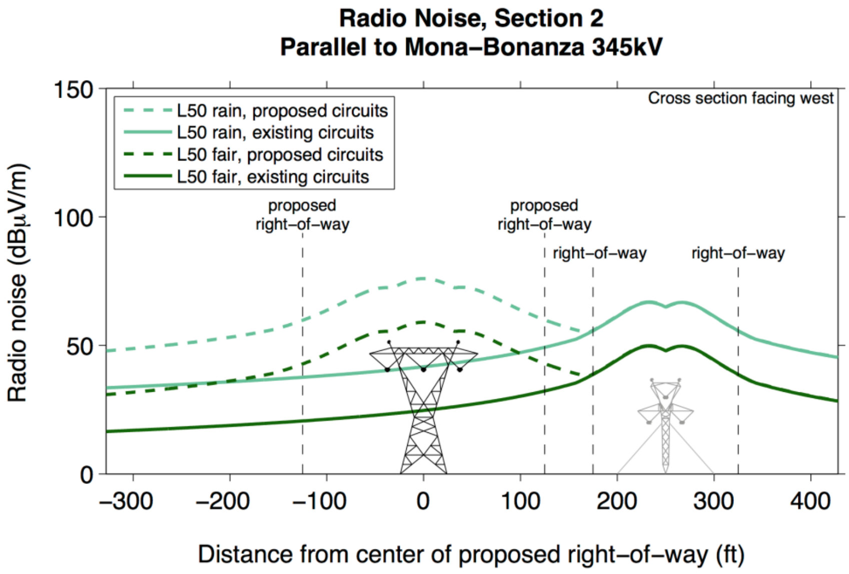
Figure O-12 Calculated Audible Noise in Cross-section 4

O.4 Radio Noise Profiles



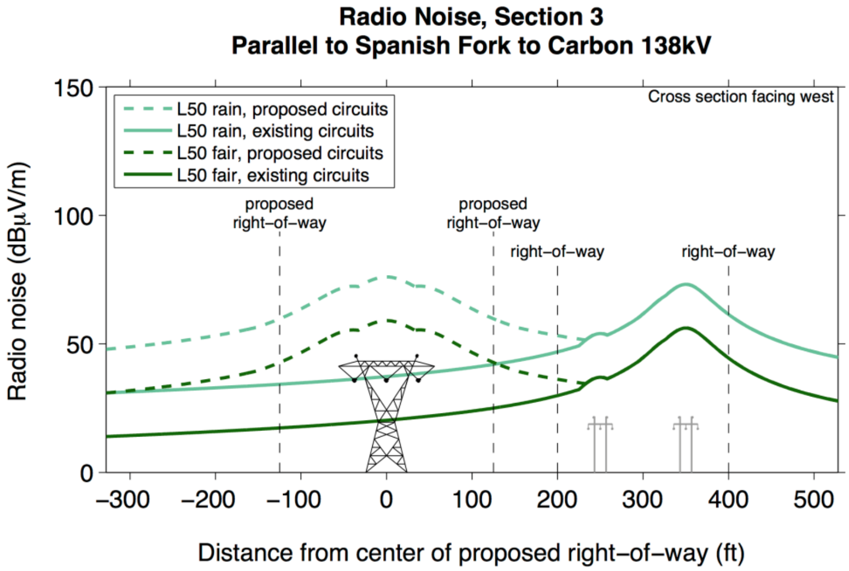
NOTE: Calculated radio noise profiles in modeled cross-section 1 (refer to Modeled Cross Sections under Section 3.2.23.3).

Figure O-13 Calculated Radio Noise in Cross-section 1



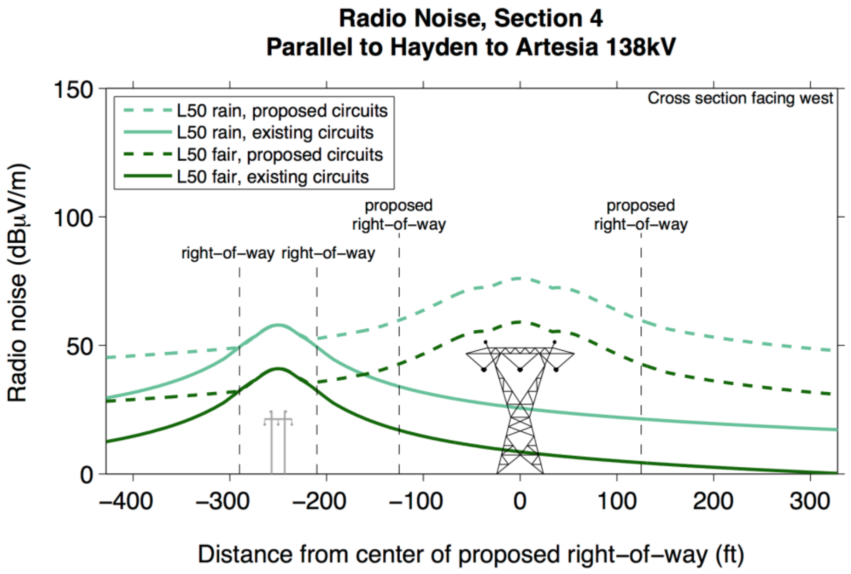
NOTE: Calculated radio noise profiles in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

Figure O-14 Calculated Radio Noise in Cross-section 2



NOTE: Calculated radio noise profiles in modeled cross-section 3 before and after operation of the Project.

Figure O-15 Calculated Radio Noise in Cross-section 3



NOTE: Calculated radio noise profiles in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.23.3) before and after operation of the Project.

Figure O-16 Calculated Radio Noise in Cross-section 4

O.5 Summary of Calculated Values

TABLE O-1
CALCULATED MAGNETIC FIELD (MILLIGAUSS)
FOR AVERAGE-LOAD CONDITIONS, NOMINAL PHASING[1]

			Proposed Right-of-way			Existing Right-of-way	
Section	**Description**	**Case[2]**	**Negative Right-of-way Edge**	**Maximum on Right-of-way**	**Positive Right-of-way Edge**	**Negative Right-of-way Edge**	**Positive Right-of-way Edge**
1	Nonparallel condition	Existing	–	–	–	–	–
		Proposed	29.9	158.1	29.9	–	–
2	Parallel to Mona-Bonanza 345kV	Existing	1.2	9.9	9.9	23.7	23.7
		Proposed	30.6	157.1	32.6	29.1	27.0
3	Parallel to Spanish Fork-Carbon 138kV	Existing	0.7	5.3	5.3	25.2	10.3
		Proposed	30.4	156.9	32.3	28.7	12.8
4	Parallel to Hayden-Artesia 138kV	Existing	1.0	1.0	0.1	6.9	6.9
		Proposed	30.3	157.9	30.0	11.0	11.8

NOTES:

[1] The "nominal phasing" condition refers to horizontal ABC phasing on all circuits, with the A phase located on the north side of the right-of-way. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The "existing" case refers to the present configuration of transmission lines with average load based on 2012 operational data. The "proposed" case refers to the same load conditions, with all transmission facilities proposed as part of the Project in operation.

kV = Kilovolt

TABLE O-2
CALCULATED MAGNETIC FIELD (MILLIGAUSS) FOR PEAK-LOAD CONDITIONS, NOMINAL PHASING[1]

Section	Description	Case[2]	Proposed Right-of-way: Negative Right-of-way Edge	Proposed Right-of-way: Maximum on Right-of-way	Proposed Right-of-way: Positive Right-of-way Edge	Existing Right-of-way: Negative Right-of-way Edge	Existing Right-of-way: Positive Right-of-way Edge
1	Non-parallel condition	Existing	–	–	–	–	–
		Proposed	51.0	377.8	51.0	–	–
2	Parallel to Mona-Bonanza 345kV	Existing	1.9	15.7	15.7	37.6	37.6
		Proposed	52.2	376.8	57.0	48.9	42.7
3	Parallel to Spanish Fork-Carbon 138kV	Existing	1.1	8.4	8.4	39.4	20.3
		Proposed	52.0	376.0	56.1	47.3	24.0
4	Parallel to Hayden-Artesia 138kV	Existing	1.1	1.1	0.1	7.8	7.8
		Proposed	51.6	377.6	51.1	14.5	19.0

NOTES:

[1] The “nominal phasing” condition refers to horizontal ABC phasing on all circuits, with the A phase located on the north side of the right-of-way. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The “existing” case refers to the present configuration of transmission lines with peak load based on 2012 operational data. The “proposed” case refers to the same load conditions, with all transmission facilities proposed as part of the Project in operation.

kV = Kilovolt

TABLE O-3
CALCULATED RANGE OF MAGNETIC FIELD (MILLIGAUSS) FOR AVERAGE-LOAD CONDITIONS, ALL PHASING ALTERNATIVES[1]

Section	Case[2]	Proposed Right-of-way: Negative Right-of-way Edge	Proposed Right-of-way: Maximum on Right-of-way	Proposed Right-of-way: Positive Right-of-way Edge	Existing Right-of-way: Negative Right-of-way Edge	Existing Right-of-way: Positive Right-of-way Edge
1	Existing	–	–	–	–	–
	Proposed	29.9	158.1	29.9	–	–
2	Existing	1.2	9.9	9.9	23.7	23.7
	Proposed	29.0 to 30.6	156.2 to 160.6	25.3 to 37.5	20.6 to 35.2	20.6 to 27.4
3	Existing	0.4 to 0.7	4.4 to 5.3	4.4 to 5.3	23.7 to 25.2	5.5 to 10.3
	Proposed	29.3 to 30.4	156.9 to 159.4	28.3 to 32.3	25.6 to 28.7	5.5 to 12.8[3]
4	Existing	1.0	1.0	0.1	6.9	6.9
	Proposed	29.5 to 30.3	157.9 to 158.3	29.8 to 30.0	6.3 to 11.0	11.8 to 14.1

NOTES:

[1] Where expressed as a range, reported values indicate the minimum and maximum calculated magnetic field levels over all phase permutations of existing and proposed transmission lines. Where expressed as a single number, the calculated magnetic-field levels do not change over phasing alternatives. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The “existing” case refers to the present configuration of transmission lines with average load based on 2012 operational data. The “proposed” case refers to the same load conditions, with all transmission facilities proposed as part of the Project in operation.

[3] For any given phasing of the Spanish Fork-Carbon #1 and #2 transmission lines, the calculated Project-related changes in magnetic field levels at this location are between -2.1 and +2.5 milligaus.

TABLE O-4
CALCULATED RANGE OF MAGNETIC FIELD (MILLIGAUSS) FOR PEAK-LOAD CONDITIONS, ALL PHASING ALTERNATIVES[1]

		Proposed Right-of-way			Existing Right-of-way	
Section	**Case[2]**	**Negative Right-of-way Edge**	**Maximum on Right-of-way**	**Positive Right-of-way Edge**	**Negative Right-of-way Edge**	**Positive Right-of-way Edge**
1	Existing	–	–	–	–	–
	Proposed	51.0	377.8	51.0	–	–
2	Existing	1.9	15.7	15.7	37.6	37.6
	Proposed	49.6 to 52.2	374.7 to 381.8	42.0 to 63.4	30.4 to 57.6	32.7 to 43.6
3	Existing	0.6 to 1.1	6.5 to 8.4	6.5 to 8.4	36.1 to 39.4	12.6 to 20.3
	Proposed	50.0 to 52.0	376.0 to 379.7	46.8 to 56.1	39.1 to 47.3	11.9 to 24.0[3]
4	Existing	1.1	1.1	0.1	7.8	7.8
	Proposed	50.4 to 51.6	377.6 to 378.0	50.9 to 51.1	9.1 to 14.5	18.6 to 20.3

NOTES:

[1] Where expressed as a range, reported values indicate the minimum and maximum calculated magnetic field levels over all phase permutations of existing and proposed transmission lines. Where expressed as a single number, the calculated magnetic field levels do not change over phasing alternatives. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The "existing" case refers to the present configuration of transmission lines with peak load based on 2012 operational data. The "proposed" case refers to the same load conditions, with all transmission facilities proposed as part of the Project in operation.

[3] For any given phasing of the Spanish Fork-Carbon #1 and #2 transmission lines, the calculated Project-related changes in magnetic field levels at this location are between -3.1 and +3.7 milligaus.

TABLE O-5
CALCULATED ELECTRIC FIELD (KILOVOLT PER METER) FOR AVERAGE CONDUCTOR SAG, NOMINAL PHASING[1]

			Proposed Right-of-way			Existing Right-of-way	
Section	**Description**	**Case[2]**	**Negative Right-of-way Edge**	**Maximum on Right-of-way**	**Positive Right-of-way Edge**	**Negative Right-of-way Edge**	**Positive Right-of-way Edge**
1	Non-parallel condition	Existing	–	–	–	–	–
		Proposed	1.28	6.17	1.27	–	–
2	Parallel to Mona-Bonanza 345kV	Existing	0.03	0.29	0.29	1.03	1.03
		Proposed	1.28	6.17	0.97	0.68	1.06
3	Parallel to Spanish Fork-Carbon 138kV	Existing	<0.01	0.07	0.07	0.57	0.52
		Proposed	1.28	6.17	1.22	0.39	0.54
4	Parallel to Hayden-Artesia 138kV	Existing	0.06	0.06	<0.01	0.81	0.81
		Proposed	1.21	6.17	1.28	0.86	0.64

NOTES:

[1] The "nominal phasing" condition refers to horizontal ABC phasing on all circuits, with the A phase located on the north side of the right-of-way. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The "existing" case refers to the present configuration of transmission lines with nominal midspan conductor heights. The "proposed" case refers to the same conductor heights on existing transmission lines, with design midspan conductor height on the proposed 500kV transmission line (60 degrees Fahrenheit conductor temperature at average load).

kV = Kilovolt

TABLE O-6
CALCULATED ELECTRIC FIELD (KILOVOLT PER METER) FOR MAXIMUM CONDUCTOR SAG, NOMINAL PHASING[1]

Section	Description	Case[2]	Proposed Right-of-way			Existing Right-of-way	
			Negative Right-of-way Edge	Maximum on Right-of-way	Positive Right-of-way Edge	Negative Right-of-way Edge	Positive Right-of-way Edge
1	Non-parallel condition	Existing	–	–	–	–	–
		Proposed	1.12	10.00	1.11	–	–
2	Parallel to Mona-Bonanza 345kV	Existing	1.12	10.00	0.82	0.74	1.05
		Proposed	<0.01	0.07	0.07	0.57	0.52
3	Parallel to Spanish Fork-Carbon 138kV	Existing	1.12	10.00	1.06	0.42	0.53
		Proposed	0.06	0.06	<0.01	0.81	0.81
4	Parallel to Hayden-Artesia 138kV	Existing	1.06	10.00	1.12	0.84	0.67
		Proposed	1.12	10.00	0.82	0.74	1.05

NOTES:

[1] The “nominal phasing” condition refers to horizontal ABC phasing on all circuits, with the A phase located on the north side of the right-of-way. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The “existing” case refers to the present configuration of transmission lines with nominal midspan conductor heights. The “proposed” case refers to the same conductor heights on existing transmission lines, with design midspan conductor height on the proposed 500kV transmission line (239 degrees Fahrenheit conductor temperature at peak load).

kV = Kilovolt

TABLE O-7
CALCULATED RANGE OF ELECTRIC FIELD (KILOVOLT PER METER) FOR AVERAGE CONDUCTOR SAG, ALL PHASING ALTERNATIVES[1]

Section	Case[2]	Proposed Right-of-way			Existing Right-of-way	
		Negative Right-of-way Edge	Maximum on Right-of-way	Positive Right-of-way Edge	Negative Right-of-way Edge	Positive Right-of-way Edge
1	Existing	–	–	–	–	–
	Proposed	1.28	6.17	1.27	–	–
2	Existing	0.03	0.29	0.29	1.03	1.03
	Proposed	1.26 to 1.29	6.16 to 6.20	0.97 to 1.48	0.68 to 1.45	1.00 to 1.06
3	Existing	<0.01	0.06 to 0.07	0.06 to 0.07	0.55 to 0.57	0.49 to 0.52
	Proposed	1.27 to 1.28	6.17 to 6.18	1.22 to 1.33	0.37 to 0.86	0.47 to 0.54
4	Existing	0.06	0.06	<0.01	0.81	0.81
	Proposed	1.21 to 1.32	6.17	1.27 to 1.28	0.77 to 0.86	0.64 to 1.02

NOTES:

[1] Where expressed as a range, reported values indicate the minimum and maximum calculated electric field levels over all phase permutations of existing and proposed transmission lines. Where expressed as a single number, the calculated electric field levels do not change significantly over phasing alternatives. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The “existing” case refers to the present configuration of transmission lines with nominal midspan conductor heights. The “proposed” case refers to the same conductor heights on existing transmission lines, with design midspan conductor height on the proposed 500kV transmission line (60 degrees Fahrenheit conductor temperature at average load).

kV = Kilovolt

TABLE O-8
CALCULATED RANGE OF ELECTRIC FIELD (KILOVOLT PER METER) FOR MAXIMUM CONDUCTOR SAG, ALL PHASING ALTERNATIVES[1]

		Proposed Right-of-way			Existing Right-of-way	
Section	**Case[2]**	**Negative Right-of-way Edge**	**Maximum on Right-of-way**	**Positive Right-of-way Edge**	**Negative Right-of-way Edge**	**Positive Right-of-way Edge**
1	Existing	–	–	–	–	–
	Proposed	1.12	10.00	1.11	–	–
2	Existing	0.03	0.29	0.29	1.03	1.03
	Proposed	1.10 to 1.14	9.99 to 10.02	0.82 to 1.33	0.74 to 1.37	1.01 to 1.05
3	Existing	<0.01	0.06 to 0.07	0.06 to 0.07	0.55 to 0.57	0.49 to 0.52
	Proposed	1.12	10.00	1.06 to 1.18	0.40 to 0.80	0.47 to 0.53
4	Existing	0.06	0.06	<0.01	0.81	0.81
	Proposed	1.06 to 1.16	9.99 to 10.00	1.11 to 1.12	0.78 to 0.84	0.67 to 0.98

NOTES:

[1] Where expressed as a range, reported values indicate the minimum and maximum calculated electric field levels over all phase permutations of existing and proposed transmission lines. Where expressed as a single number, the calculated electric field levels do not change significantly over phasing alternatives. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The "existing" case refers to the present configuration of transmission lines with nominal midspan conductor heights. The "proposed" case refers to the same conductor heights on existing transmission lines, with design midspan conductor height on the proposed 500kV transmission line (239 degrees Fahrenheit conductor temperature at peak load).

kV = Kilovolt

TABLE O-9
CALCULATED AUDIBLE NOISE (dBA), L_{50} FOUL WEATHER[1]

			Proposed Right-of-way			Existing Right-of-way	
Section	**Description**	**Case[2]**	**Negative Right-of-way Edge**	**Maximum on Right-of-way**	**Positive Right-of-way Edge**	**Negative Right-of-way Edge**	**Positive Right-of-way Edge**
1	Non-parallel condition	Existing	–	–	–	–	–
		Proposed	51.9	56.6	51.9	–	–
2	Parallel to Mona-Bonanza 345kV	Existing	36.1	42.2	42.2	44.4	44.4
		Proposed	52.0	56.7	52.4	51.2	48.7
3	Parallel to Spanish Fork-Carbon 138kV	Existing	29.1	33.8	33.8	36.0	40.9
		Proposed	51.9	56.6	52.0	49.7	46.6
4	Parallel to Hayden-Artesia 138kV	Existing	20.8	20.8	14.6	25.6	25.6
		Proposed	51.9	56.6	51.9	47.4	49.2

NOTES:

[1] Calculated audible noise levels are the same for all phasing alternatives. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The "existing" case refers to the present configuration of transmission lines with nominal midspan conductor heights. The "proposed" case refers to the same conductor heights on existing transmission lines, with design midspan conductor height on the proposed 500kV transmission line (60 degrees Fahrenheit conductor temperature at average load).

dBA = Decibel (A-weighted)
kV = Kilovolt
L_{50} = Median sound level

TABLE O-10
CALCULATED RADIO NOISE (dBμV/m), L_{50} FAIR WEATHER[1]

Section	Description	Case[2]	Location[3]: Minus 100 Feet Beyond Outer Conductor	Location[3]: Plus 100 Feet Beyond Outer Conductor
1	Non-parallel condition	Existing	–	–
		Proposed	39.6	39.6
2	Parallel to Mona-Bonanza 345kV	Existing	18.9	31.6
		Proposed	39.6	31.8
3	Parallel to Spanish Fork-Carbon 138kV	Existing	15.7	32.2
		Proposed	39.6	32.2
5	Parallel to Hayden-Artesia 138kV	Existing	16.9	2.7
		Proposed	28.5	39.6

NOTES:

[1] Calculated radio noise levels are the same for all phasing alternatives. Negative and positive edges of the right-of-way refer to the edges of the right-of-way to the south and the north, respectively.

[2] The "existing" case refers to the present configuration of transmission lines with nominal midspan conductor heights. The "proposed" case refers to the same conductor heights on existing transmission lines, with design midspan conductor height on the proposed 500kV transmission line (60 degrees Fahrenheit conductor temperature at average load).

[3] The outer conductor is selected across the entire transmission corridor, which may consist of more than one parallel right-of-way. Where the Project runs parallel to existing transmission lines, one outermost conductor belongs to a circuit adjacent to the Project.

dBμV/m = Decibels above 1 microvolt per meter
kV = Kilovolt
L_{50} = Median radio noise level

Appendix P
Public Comments and Agency Responses on the Draft EIS and LUPAs

APPENDIX P – PUBLIC COMMENTS AND AGENCY RESPONSES ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND PROPOSED LAND-USE PLAN AMENDMENTS

P.1 Introduction and Background

Appendix P contains the comments received by the Bureau of Land Management (BLM) regarding the Draft Environmental Impact Statement (EIS) and Land-use Plan Amendments (LUPA) for the Energy Gateway South Transmission Project (Project), and the BLM's responses to those comments.

The BLM published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on February 21, 2014 (Volume 79, Number 35, page 9916). The U.S. Environmental Protection Agency (EPA) also published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on the same day, which initiated a 90-day public comment period.

The availability of the Draft EIS; deadline for public comments; and locations, dates, and times of public meetings on the Draft EIS were announced in paid newspaper legal notices, paid newspaper advertisements, and project newsletters that were mailed to affected property owners, agencies, and stakeholders. Federal, state, and local government agencies; institutions; organizations; and individuals were sent copies of the Draft EIS and LUPAs (29 paper copies and 71 electronic copies) for review and comment.

During the 90-day comment period, the BLM conducted 12 open-house meetings to provide the public with an opportunity to view informational displays on the Project, discuss the Project individually with BLM staff and representatives, and provide comments on the Draft EIS and LUPAs. The public open houses were held on from March 10 through 13, March 17 through 20, and March 31 through April 3, 2014. The open houses were held in Grand Junction, Rangely, and Craig, Colorado; Vernal, Fort Duchesne, Roosevelt, Green River, Price, Mountain Pleasant, and Nephi, Utah; and Baggs and Rawlins, Wyoming, respectively. A total of 279 people attended the public open houses.

P.1.1 General Summary of Comments

During the 90-day comment period, 180 submittals offering comments on the Draft EIS and LUPAs were received from various federal, state, and local agencies; various special interest groups; corporations, and public citizens. This included 61 emails, 63 letters, and 56 comment forms with comments submitted at the public open house meetings and mailed to the BLM. A list of agencies, organizations, and individuals who commented on the Draft EIS is presented in Table P-1.

TABLE P-1
GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND LAND-USE PLAN AMENDMENTS

Submittal Number	Name/Affiliation
Federal	
F1	U.S. Environmental Protection Agency
F2	U.S. Fish and Wildlife Service
F3	National Park Service

TABLE P-1
GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND LAND-USE PLAN AMENDMENTS

Submittal Number	Name/Affiliation
F4	Utah Reclamation Mitigation and Conservation Commission
F5	Western Area Power Administration
State	
S1	Colorado Parks and Wildlife
S2	Utah Public Lands Policy Coordination (Office of the Governor)
S3	State of Wyoming – Governor's Office
S4	Wyoming Department of Environmental Quality
S5	Wyoming Game and Fish Department
S6	Wyoming Office of State Lands and Investments
County	
C1	Board of Carbon County Commissioners
C2	Coalition of Local Governments
C3	Central Utah Water Conservancy District
C4	Duchesne County Commission
C5	Medicine Bow Conservation District
C6	Moffat County Commissioners
C7	Sanpete County Economic Development
C8	Sanpete County Commissioners
C9	Sanpete County Public Lands Council
C10	Sanpete County Zoning Administration
C11	Sanpete Water Conservancy District
C12	Sweetwater County Commissioners
City/Town	
CT1	Fairview City
CT2	Mount Pleasant City
Special Interest	
SI1	Audubon Rockies, Conservation Colorado, Southern Utah Wilderness Alliance, The Wilderness Society, Natural Resources Defense Council, Wild Utah Project, Western Resource Advocates, National Wildlife Federation, WildEarth Guardians
SI2	Argyle Wilderness Preservation Corporation
SI3	Defenders of Wildlife
SI4	National Parks Conservation Association
SI5	Sierra Club
SI6	Voices of the Valley
SI7	Western States Sportsman Alliance
SI8	WildEarth Guardians
SI9	Alliance for Historic Wyoming
Corporations	
CP1	Anadarko Petroleum
CP2	Fairview Land and Livestock Company[1]
CP3	Hopcreek Hideway LLC
CP4	Church of Jesus Christ of Latter-day Saints
CP5	Moon Lake Electric Association
CP6	Myrin Ranch, Inc.
CP7	QEP Field Services Company
CP8	Questar Pipeline Company
CP9	Rocky Mountain Power
CP10	TransWest Express LLC

TABLE P-1 GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND LAND-USE PLAN AMENDMENTS	
Submittal Number	**Name/Affiliation**
Individuals	
I1	John and Mickey Allen
I2	Nancy and Victor Anderson
I3	Rian B. Anderson
I4	Vito Angelotti
I5	Ray Beck
I6	Tyler Bench
I7	David Bigelow
I8	Deanna D. Bigelow
I9	Devin Bigelow
I10	Janet Blytheway
I11	Elma Broadhead
I12	Elizabeth Campbell
I13	Bud Carlson
I14	Carolyn Carter – Carter Family Trust
I15	John Clark
I16	Barry L. Cook
I17	Camilyn Cook
I18	I. Branch Cox
I19	Allen M. Day, M.D.
I20	Mike Dennis – Bernell A. Dennis Family Trust
I21	Robert G. Dotson
I22	Janet Dowland
I23	Mike Duzik
I24	Renee Dykes
I25	Sheron East
I26	Don and Kathleen Eicher – letter dated April 17, 2014[2]
I27	Don and Kathleen Eicher – letter dated April 25, 2014[2]
I28	Affel Erekson
I29	Carolyn Everett
I30	Gordon Everett
I31	Onieta Faatz
I32	Brian Faust
I33	Mark Faust
I34	Merrily Faust
I35	Judy Feld
I36	Todd Feld
I37	Doug Feterl – Feterl Family LLC
I38	Eric and Claudia Fossum
I39	John S. Frisby – Frisby Family LLC
I40	Byron Fryer and James A. Valdez
I41	Dave Fullmer
I42	Susan Fullmer
I43	Richard O. Funk
I44	Nolan Gray
I45	Jane Griffiths
I46	Russell and Arlene Griffiths

TABLE P-1
GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND LAND-USE PLAN AMENDMENTS

Submittal Number	Name/Affiliation
I47	Frank Grover
I48	DeMar Guymon
I49	James and Mary Hatfield
I50	Nancy Hatt
I51	James Hendrickson
I52	Jeremy Hermansen
I53	Kolten Hermansen
I54	Tori Hermansen
I55	Butch Heth
I56	DeAnn C. Houghton
I57	Charles Howard
I58	Elizabeth Hunt
I59	Duron Hunter
I60	Bryce and Georgia Jackson
I61	D.R. Jackson
I62	Gary Jensen
I63	Lynne M. Jensen
I64	Jordan Jex
I65	Julye H. Jex
I66	Patty Jex
I67	Neil Jorgensen
I68	Jodi Loveless
I69	Trevor and Jodi Loveless
I70	Don Lyons
I71	Jeremy Madsen
I72	Terry Madsen
I73	John B. Magnuson
I74	Jack McAllister – letter dated April 2, 2014 letter
I75	Jack McAllister – letter dated April 7, 20144 letter[1]
I76	James McQueen
I77	Kathleen S. Mower
I78	Scott V. Mower
I79	Pete Norris
I80	James H. Ockey
I81	Marilyn Oden
I82	Sharon S. O’Toole
I83	Jeff and Tori Pack
I84	Greg Parker
I85	Gerald and Diane Pearl
I86	Chelsey Peck
I87	Roger Peck
I88	Roger and Melissa Peck
I89	Gordon L. Pedrow
I90	Norman and Cherie Petersen
I91	David and Susie Peterson
I92	Susie Peterson
I93	Donna Pierce

TABLE P-1
GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND LAND-USE PLAN AMENDMENTS

Submittal Number	Name/Affiliation
I94	Jeff G. Rappleye
I95	Jerrold N. Rasmussen
I96	Suzan Rasmussen
I97	Maria Ricks
I98	Tim Riley
I99	J.D. Roberts
I100	Don and Carolyn Robertson
I101	Don Robinson
I102	Tiffany Robinson
I103	Janae Rowley
I104	Michael and Janae Rowley
I105	Archie and Angie Roybal
I106	Angie Roybal
I107	Archie Roybal
I108	Robert R. and Linda S. Runyan
I109	Carol Scholes
I110	Robert Scott
I111	Cherilyn T. Searle
I112	Beth Shorma
I113	Justin Slaughter
I114	Michelle Slaughter
I115	Aprille Smith
I116	Scot Smith
I117	Glen L. and Lurrine Sorenson Family Trust
I118	Nancy Stocker
I119	Robert N. Stocker
I120	David N. Sundwall
I121	Ramon and Harriett Swapp
I122	Sandra Swasey
I123	Vernon and Sandra Swasey
I124	Randall S. Thornbald
I125	Randy Thornbald
I126	David J. Uherka
I127	Dorothy Uherka
I128	Pamela Underwood
I129	Don Williams
I130	Travis Winder
I131	Lois Dennis Woffinden, Trustee
I132	Max G. Worthington
I133	Robert and Sandy Wright
I134	Stan and JoDean Wright
Form Letters	
FL1	Form letter 1 (see list)
FL2	Conservation Colorado (see list)

NOTES:
[1] Duplicate letter sent as a corporation and as an individual
[2] Duplicate letter, but one addressed to Juan Palma and one addressed to Tamara Gertsch

In compliance with the requirements of Council on Environmental Quality regulations for implementing National Environmental Policy Act (NEPA), all substantive comments received were assessed and a response provided. Of the 180 comment submittals received, 1,611 comments were identified as substantive according to BLM guidelines (BLM's NEPA Handbook, H-1790-1, January 2008). Most individual comment submittals had multiple comments. The handbook defines substantive comments as doing one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EIS
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis
- Present new information relevant to the analysis
- Present reasonable alternatives other than those analyzed in the EIS
- Cause changes or revisions in one or more of the alternatives

Comments not considered substantive include those:

- In favor of or against the Proposed Action or alternatives without reasoning that meets the BLM's definition of substantive comments
- Only agreeing or disagreeing with BLM policy or resource decisions without justification or supporting data that meet the BLM's definition of substantive
- Pertaining to the Project area or Project
- Taking the form of vague, open-ended questions

Submittals containing substantive comments on the Draft EIS and LUPAs are reproduced in full and presented at the end of this appendix—categorized by federal agencies, state agencies, local agencies, special interest groups, corporations, individuals, and form letters. Each substantive comment in a submittal is bracketed in the left margin and labeled with a letter, which corresponds with the BLM's response on the right side of the page. Comments received on the Draft EIS fall into the categories presented in Table P-2.

P.1.2 Issues and Key Comments

Table P-2 indicates the number of substantive comments received (1,611 comments) by issue. The final column indicates the percentage of comments for each issue in relation to the total number of substantive comments received.

TABLE P-2
COMMENTS BY ISSUE

Issue	Number of Comments	Percent of Total
Agencies' purpose and need	3	<1
Air quality and climate change	8	<1
Alternatives routes analysis and effects analysis	297	15
Applicant's interest and objectives	27	1
Congressionally designated areas, special designations, and other management areas	86	4
Cultural resources	11	1
Decision rationale	34	2
Environmental justice	1	<1
Fish and aquatics resources and water resources	51	3
Geologic hazards, soils, and minerals	36	2
Inventoried roadless areas	1	<1

TABLE P-2 COMMENTS BY ISSUE		
Issue	**Number of Comments**	**Percent of Total**
Land use (existing, future, zoning), grazing, and parks, preservation, and recreation resources	126	6
Mitigation measures	125	6
National historic and scenic trails	3	<1
Native American concerns	6	<1
Lands with wilderness characteristics	27	1
Other comments received	166	10
Paleontological resources	1	<1
Permitting and approvals	22	1
Plan of Development	14	1
Project description	73	4
Public health and safety (includes electromagnetic frequency, noise, and general)	34	2
Social and economic conditions	45	2
Transportation and access	8	<1
Vegetation, (includes noxious and invasive weeds, special status, and other)	29	1
Visual resources	88	4
Wildland fire ecology and management	1	<1
Wildlife (includes migratory birds, sage grouse, and special status species)	282	14
Total	**1,605**	**100**

Provided below is a summary description of the comments on these issues.

P.1.2.1 Agencies' Purpose and Need

Comments were received from the Sierra Club, PacifiCorp, doing business as Rocky Mountain Power (Applicant), and TransWest Express, LLC. The Sierra Club provided the opinion that, given the urgency of climate change, the BLM should no longer grant transmission rights-of-way based on the need identified by the Applicant. The Applicant requested that all viable, major alternative routes considered in the Draft EIS be retained for continued analysis in the Final EIS; particularly, alternative routes that avoid land of the Uintah and Ouray Indian Reservation and/or individual Indian-owned land because of their stated concern related to uncertainty in successfully negotiating rights-of-way with respective tribal governments to ultimately gain easement access on reservation lands or allotted lands. TransWest Express, LLC requested additional explanation of the BLM's criteria for determining the Agency Preferred Alternative route be added to the EIS.

P.1.2.2 Air Quality and Climate Change

Comment themes related to disclosing impacts on air quality from construction activities and how the Project may contribute to climate change. Examples include the EPA requesting nitrous oxide concentration modeling; and the National Park Service (NPS) requesting a description of the site-specific mitigation measures and identification of air quality monitoring techniques to ensure fugitive dust does not exceed applicable standards during construction. The Consortium of Nine Non-governmental Organizations (the Consortium) suggested both the President's Climate Action Plan and the BLM's NEPA guidance require analysis of the type of energy-generating resources that would benefit from using the proposed transmission lines (referring to the Project, the proposed TransWest Express Transmission Project, and the potential future Zephyr Transmission Project). The Sierra Club suggested including analytical modeling of changes to the wholesale electric power transactions assuming the Project were in place, such as additional development of coal-fired power plants and other potential energy generation facilities in Carbon County, Wyoming.

P.1.2.3 Alternative Routes Analysis and Effects Analysis

The Consortium suggested that for sensitive resource areas (such as special designations or special management areas), the BLM should consider an alternative route alignment that avoids the area or burying the transmission line near or in an existing right-of-way to avoid or minimize disturbance. The Consortium also contended that presenting impacts by alternative route rather than by segment aggregates impacts at too coarse of a spatial scale to allow reviewers to understand and evaluate the level of impact across the individual segments.

Comments also were received recommending colocation of this Project with the proposed TransWest Express Transmission Project and potential future Zephyr Transmission Project, wherever possible, to minimize environmental effects. For example, the Consortium and Moffat County recommended colocation wherever the proposed or planned transmission projects would be located in a designated utility corridor.

The U.S. Fish and Wildlife Service (FWS) commented that some habitat types may take up to 25 years to return to preconstruction conditions if disturbed. As such, the FWS suggested any impact causing more than a 5-year disturbance should be considered a long-term effect.

P.1.2.4 Applicant’s Interests and Objectives

Comments received questioned the need for this Project. The Sierra Club expressed concern the data used in developing PacifiCorp’s Integrated Resource Plan was dated. The Consortium also commented that the description of PacificCorp’s energy-usage growth and resource needs are outdated and must be revised.

P.1.2.5 Congressionally Designated Areas, Special Designations, and Other Management Areas

Several comments, including comments from the Consortium, included recommendations for expanded analysis of congressionally designated areas (such as the Deerlodge Road portion of the Dinosaur National Monument and the Lower Green River suitable Wild and Scenic River segment) and special designations and other management areas to ensure impacts are adequately addressed and to include analysis of compliance with resource management plan goal/objectives/prescriptions.

The NPS outlined that, by crossing the Deerlodge Road portion of Dinosaur National Monument, a right-of-way permit would be required from the NPS. For this permit to be issued, the Project would need to meet the criteria established for new developments and a site-specific analysis would be required. The NPS also stated the Project may not be compliant with the Dinosaur National Monument approved General Management Plan.

P.1.2.6 Cultural Resources

The Alliance for Historic Wyoming urged the BLM to demonstrate understanding of Rural Historic Landscapes and the broader definition of traditional cultural properties in studies conducted to support consultation under Section 106 of the National Historic Preservation Act (also refer to Section P.1.2.15).

P.1.2.7 Decision Rationale

Comments were received from the Sierra Club and Colorado Parks and Wildlife questioning the approach for analyzing impacts on greater sage-grouse and commenting on their preference for the transmission-line route based on potential effects on the greater sage-grouse and the objectives of the Tuttle Mountain Conservation Easement. The Sierra Club provided several comments on approaches for protecting and advancing recovery of important sage-grouse habitats.

P.1.2.8 Environmental Justice

A comment from the Alliance for Historic Wyoming identified potential environmental justice concerns related to the Town of Hanna, Wyoming, because the Project will pass near the town and disrupt adjacent vistas.

P.1.2.9 Fish and Aquatic Resources and Water Resources

Comments were received related to water resources, including concerns about the analysis of how the Project would cross or potentially impact these resources. Examples include the EPA's recommendation that all water resources should be mapped in relation to the alternative routes and the impacts on individual water resources should be analyzed and disclosed. The EPA also provided comments on the cumulative effects analysis for water resources.

The FWS asked if the Applicant had identified and consulted with the FWS on the water sources to be used in construction of the Project, including the water required for mud rotary drilling. The FWS comments also included water depletions as a potential environmental effect from this Project (i.e., that a change in water use from municipal purposes to a transmission line would constitute a new depletion).

P.1.2.10 Geologic Hazards, Soils, and Mineral Resources

Comments received identified potential geologic hazards along alternative routes and the need for protecting the transmission line from unstable soils. Comments also stated the Project should not take precedence over mineral leases. For example, several individuals submitted a form authorized letter discussing the potential for geologic hazards from the construction of the Project and suggested mitigation measures that would help reduce the potential for these hazards. The Utah State Office of the Governor and the Wyoming Office of State Lands and Investments commented the transmission line should be sited so as to not preclude future mineral lease development or rights-of-way (e.g., roads, pipelines) on state-administered lands.

P.1.2.11 Inventoried Roadless Areas

A comment was received from the Consortium regarding the potential indirect effects on high-quality avian habitat from the Project crossing near the inventoried roadless areas (IRA) adjacent to Reservation Ridge. The Consortium commented that a route variation of Alternative COUT-C (the Agency Preferred Alternative) that follows Reservation Ridge would avoid direct impacts on the adjacent U.S. Forest Service IRA; however, indirect impacts would include increased predation and other adverse impacts on avian species that use the high-quality habitat present in the IRA.

P.1.2.12 Land Use (Existing, Future, Zoning), Grazing, and Parks, Preservation, and Recreation Resources

Comments expressing concern about potential conflicts with existing or future land uses—including conflicts with planned or proposed development and recreation sites, areas, and trails and use of utility corridors—were received. For example, Moon Lake Electric expressed concern about the Project and the proposed TransWest Express Transmission Project being located in the same corridor as a Moon Lake Electric planned transmission line. Individuals and corporations requested mitigation of effects on agricultural lands, especially if pivot irrigation is precluded by the presence of the transmission line. The Western States Sportsman Alliance suggested some compensation may be prudent for the ranches that depend on the grazing lands that may be affected. The Corporation of the Presiding Bishop of the Church of Jesus Christ Latter Day Saints expressed concern about the Project affecting recreational camp properties (Camp Timberlane and Crescent Regional Recreation Camp). Several individuals expressed concern about the Project affecting the Gooseberry Narrows Reservoir Project.

P.1.2.13 Mitigation Measures

Comments received suggested additional or modified mitigation measures for biological resources, wetlands, and watershed areas related to access roads, including implementation of buffer zones for riparian areas and measures to minimize impacts on sage-grouse. Also, the Consortium suggested the BLM should employ landscape-level mitigation to mitigate the detrimental effects on lands with wilderness characteristics, including measures such as off-site mitigation, landscape-level conservation efforts, and technological opportunities for avoiding impacts (e.g., upgrading voltage ratings on existing lines rather than building new transmission lines). The Consortium also suggested compensatory mitigation should be identified and disclosed for each alternative route and be part of the BLM's decision on the Project; that mitigation should be identified for the cumulative effects of having potentially three new transmission projects (the Project, the TransWest Express Transmission Project, and the potential future Zephyr Transmission Project) in the same location; and that all mitigation and monitoring reports should be made available for public review.

The Sierra Club requested that the EIS demonstrate better how mitigation approaches are consistent with the BLM Draft Regional Mitigation Manual, Secretarial Order No. 3330 (refer to Section IV), and the Presidential Memorandum. The FWS suggested selective mitigation measures provide criteria or parameters so that the public may understand better what soils and vegetation types may be particularly sensitive to disturbance.

P.1.2.14 National Historic and Scenic Trails

Comments expressed concern with visual impacts on national historic and scenic trails. The Coalition of Local Governments suggested the Draft EIS did not accurately disclose the condition of trail segments.

P.1.2.15 Native American Concerns

Comments related to crossing Indian reservation lands were received from agencies including the EPA who recommended that EIS address tribal ordinances and tribal council rules and conditions for crossing reservation lands. The NPS suggested the EIS be reviewed for consistency of tribal terms (i.e., Ute Mountain Tribe versus Ute Mountain Ute Tribe) and suggested adding the Religious Freedom Restoration Act of 1993 to the list of relevant regulatory measures noted in the EIS.

P.1.2.16 Lands with Wilderness Characteristics

Comments were received regarding how lands with wilderness characteristics were addressed in the Draft EIS. The Coalition of Local Governments provided the opinion that, while the BLM has the authority to conduct inventories regarding the presence or absence of wilderness characteristics, the BLM lacks legal authority to change management of these areas to protect "alleged" wilderness. The Consortium suggested that lands with wilderness characteristics should be managed as areas of critical environmental concern or special recreation management areas and inventories of the lands with wilderness characteristics adjacent to wilderness study area units should be completed and the results considered by BLM in their decision on the Project. The Consortium also discussed concerns with how specific units were affected and discussed in the EIS, particularly in the BLM Little Snake Field Office.

P.1.2.17 Paleontological Resources

An individual commented on potential locations for future paleontological discoveries near the Gooseberry Narrows Reservoir Project.

P.1.2.18 Permitting and Approvals

Comments from the NPS related to the process and requirements for a right-of-way permit required to cross Dinosaur National Monument were provided. Western Area Power Administration provided comments pertaining to requirements for construction of the Project near a Western Area Power Administration transmission line. The Colorado Parks and Wildlife provided information supporting their opinion that the Project would be prohibited from crossing designated conservation easements (i.e., Tuttle Ranch and Cross Mountain Ranch). The Wyoming Department of Environmental Quality stated a temporary turbidity authorization would be required since the Project could exceed turbidity criteria. Duchesne County commented they would not permit the transmission line along Alternative COUT-A due to impacts on landowners, residents, and farmers/ranchers.

P.1.2.19 Plan of Development

The EPA and Wyoming Department of Environmental Quality provided recommendations related to reclamation planning to be included in the Plan of Development (POD) once detailed design and engineering of the selected route is completed. The FWS recommended the locations of access roads for the route selected for construction should be identified in the POD and reviewed by cooperating agencies prior to the BLM and U.S. Forest Service decisions on the Project.

P.1.2.20 Project Description

Several comments received asked for clarification on some aspects of the Project description. The EPA requested additional information regarding the role of monitors during construction, operation, and maintenance of the facility.

P.1.2.21 Public Health and Safety (Electromagnetic Frequency, Noise, and General)

The NPS suggested the EIS make clear that federal and state agencies, municipalities, and local governments may adopt regulations that impose maximum noise limits or noise mitigation requirements within their jurisdictions. The NPS also suggested the Draft EIS provide estimates of transmission line noise under conditions of light precipitation (such as rain, fog, or snow) when increased humidity leads to louder transmission noise, while the ambient sound level remains low.

P.1.2.22 Social and Economic Conditions

Comments on potential socioeconomic impacts were received from the State of Utah Office of the Governor, Board of Carbon County Commissioners, Sweetwater County Commission, special interest groups, and individuals. Comments included disclosing impacts on private land values and ensuring consistency with the analysis approach used for socioeconomic assessment of the TransWest Express Transmission Project. Comments suggesting other type of indirect effects that should be included in the analysis also were received.

P.1.2.23 Transportation and Access

Comments on transportation and access include potential effects on existing and development of access roads, concerns from other corporations and agencies regarding accessibility to their projects during construction of the Project, and requests that a transportation plan be part of the POD or EIS. For example, Western Area Power Administration requires the ability to access their fixed sites and transmission line structures. The Board of Carbon County Commissioners encourages planning to limit the amount of vegetation and ground disturbance from the Project. The Coalition of Local Governments suggested impacts on transportation and access should be assessed by region.

P.1.2.24 Vegetation (Noxious and Invasive Weeds, Special Status, and Other)

The FWS requested further information for the reader to understand better where the Project would avoid special status plants and habitat and how mitigation measures would be applied to reduce impacts on vegetation. The FWS also requested that indirect impacts on plant species from using water from the Platte River drainage be included in the analysis and that expanded discussion in the cumulative analysis was warranted to more adequately disclose any threats posed by the Project in conjunction with the proposed TransWest Express Project.

P.1.2.25 Visual Resources

The NPS and National Parks Conservation Association commented on potential visual impacts on Dinosaur National Monument if the Project would cross Deerlodge Road near the visitor kiosk.

The Coalition of Local Governments commented on potential visual impacts on possible segments of the Cherokee Trail. The Sanpete County Economic Development expressed concerns with potential visual impacts on Highway 132 in the canyon that is used as the primary access to Sanpete Valley. The Sanpete County Commissioners and Sanpete Water Conservancy District are concerned with potential visual impacts on the Huntington-Eccles Scenic Byway and Gooseberry Narrows Reservoir recreation area. Fairview City is concerned with impacts on Skyline Drive Scenic Byway (Highway 31). Individuals provided comments expressing concerns about the potential visual impacts on residential and recreational properties.

The Consortium suggested the Project would not be compliant with the objectives of the BLM visual resource management classification at the crossing of the Lower Green River Area of Environmental Concern in Uintah County.

P.1.2.26 Wildland Fire Ecology and Management

A few commenters expressed concern over increased risk of wildland fire during construction due to the presence of the transmission line.

P.1.2.27 Wildlife (Including Migratory Birds, Sage-Grouse, and Special Status Species)

Several comments were received expressing concern about the impacts of construction, operations, and maintenance of the transmission line on wildlife resources, especially greater sage-grouse, migratory bird habitat, and other sensitive and protected species. For example, the Sierra Club suggested an assessment tool or evaluation strategy (approved by the FWS) be used to quantify the interim and permanent impacts on habitats in terms of those provided by the habitat ecological services. They also expressed their opinion that BLM field office timing stipulations are inconsistent and inadequate to protect some resources, as well as suggesting that wildlife protections should be consistent across BLM field office planning areas.

The FWS requested expanded analysis of migratory birds and greater sage-grouse. Also, the FWS requested the Project be sited to avoid vegetation clearing in areas of potential yellow-billed cuckoo habitat or that such areas be spanned without vegetation removal and that access roads should avoid intact riparian habitats. The FWS also suggested that compensation for lost habitat services should include compensation for long-term (post-construction) habitat loss, alteration, and fragmentation.

P.1.2.28 Other Comments Received

Some comments requested copies of Project documents, including the Record of Decision when completed.

THIS PAGE INTENTIONALLY LEFT BLANK

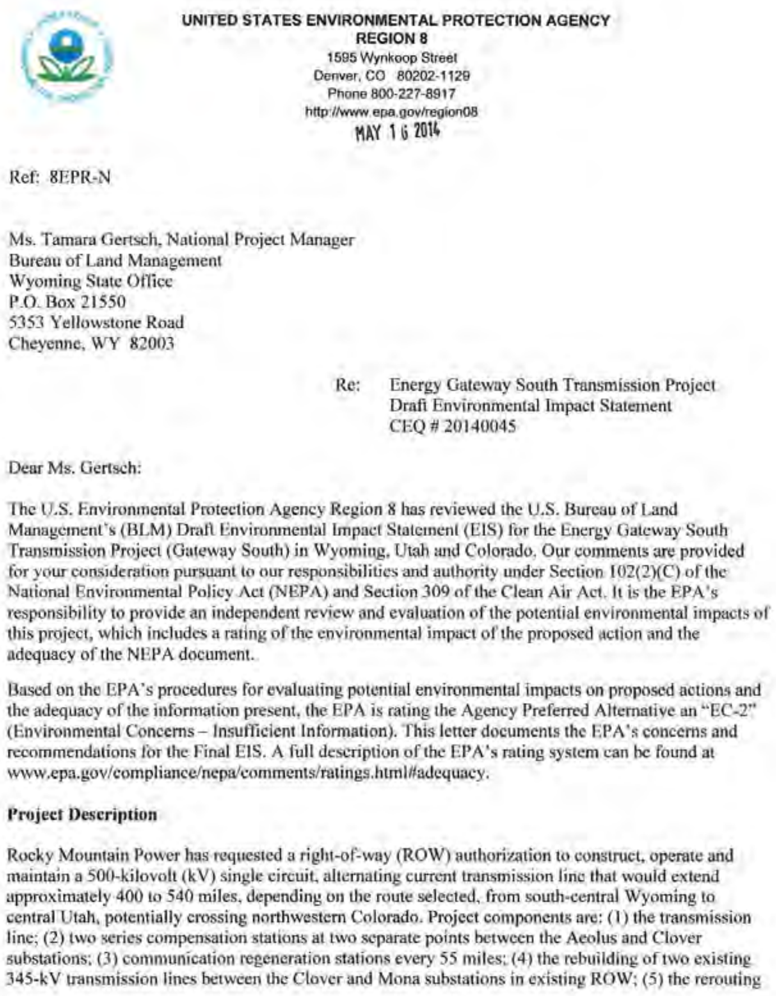
Exhibit P1
Federal

Comment(s)

Response(s)

F1

U.S. Environmental Protection Agency



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

MAY 1 6 2014

Ref: 8EPR-N

Ms. Tamara Gertsch, National Project Manager
Bureau of Land Management
Wyoming State Office
P.O. Box 21550
5353 Yellowstone Road
Cheyenne, WY 82003

Re: Energy Gateway South Transmission Project
Draft Environmental Impact Statement
CEQ # 20140045

Dear Ms. Gertsch:

The U.S. Environmental Protection Agency Region 8 has reviewed the U.S. Bureau of Land Management's (BLM) Draft Environmental Impact Statement (EIS) for the Energy Gateway South Transmission Project (Gateway South) in Wyoming, Utah and Colorado. Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. It is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project, which includes a rating of the environmental impact of the proposed action and the adequacy of the NEPA document.

Based on the EPA's procedures for evaluating potential environmental impacts on proposed actions and the adequacy of the information present, the EPA is rating the Agency Preferred Alternative an "EC-2" (Environmental Concerns – Insufficient Information). This letter documents the EPA's concerns and recommendations for the Final EIS. A full description of the EPA's rating system can be found at www.epa.gov/compliance/nepa/comments/ratings.html#adequacy.

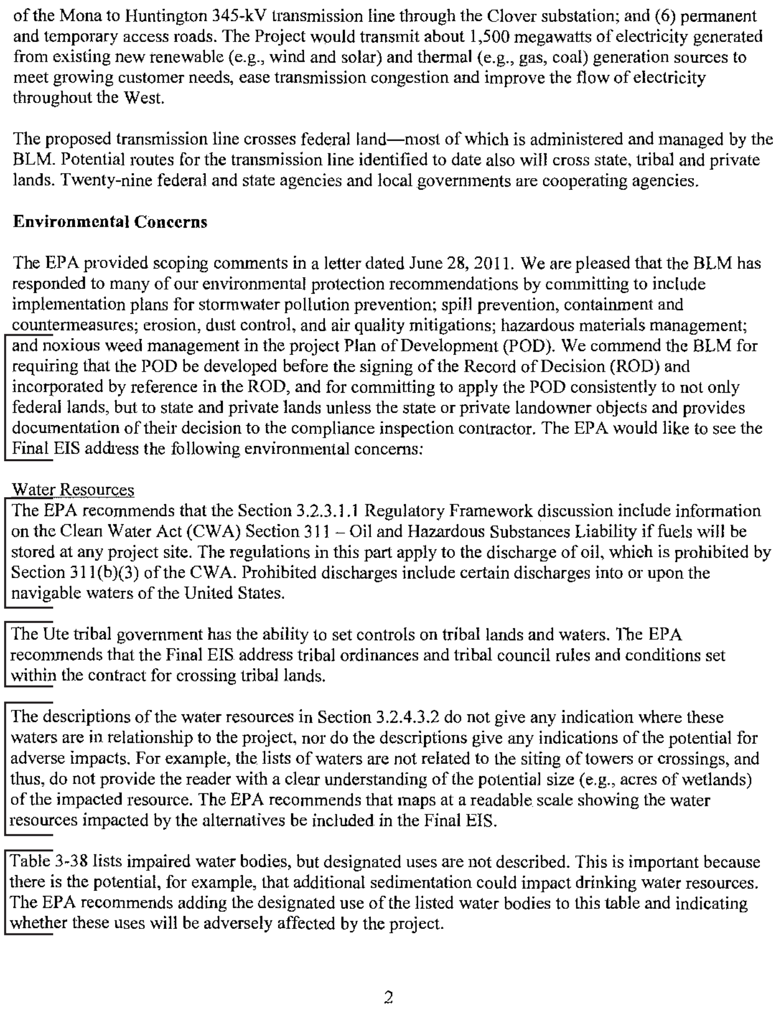
Project Description

Rocky Mountain Power has requested a right-of-way (ROW) authorization to construct, operate and maintain a 500-kilovolt (kV) single circuit, alternating current transmission line that would extend approximately 400 to 540 miles, depending on the route selected, from south-central Wyoming to central Utah, potentially crossing northwestern Colorado. Project components are: (1) the transmission line; (2) two series compensation stations at two separate points between the Aeolus and Clover substations; (3) communication regeneration stations every 55 miles; (4) the rebuilding of two existing 345-kV transmission lines between the Clover and Mona substations in existing ROW; (5) the rerouting

Comment(s)

Response(s)

F1 **U.S. Environmental Protection Agency (cont.)**



of the Mona to Huntington 345-kV transmission line through the Clover substation; and (6) permanent and temporary access roads. The Project would transmit about 1,500 megawatts of electricity generated from existing new renewable (e.g., wind and solar) and thermal (e.g., gas, coal) generation sources to meet growing customer needs, ease transmission congestion and improve the flow of electricity throughout the West.

The proposed transmission line crosses federal land—most of which is administered and managed by the BLM. Potential routes for the transmission line identified to date also will cross state, tribal and private lands. Twenty-nine federal and state agencies and local governments are cooperating agencies.

Environmental Concerns

The EPA provided scoping comments in a letter dated June 28, 2011. We are pleased that the BLM has responded to many of our environmental protection recommendations by committing to include implementation plans for stormwater pollution prevention; spill prevention, containment and countermeasures; erosion, dust control, and air quality mitigations; hazardous materials management; and noxious weed management in the project Plan of Development (POD). We commend the BLM for requiring that the POD be developed before the signing of the Record of Decision (ROD) and incorporated by reference in the ROD, and for committing to apply the POD consistently to not only federal lands, but to state and private lands unless the state or private landowner objects and provides documentation of their decision to the compliance inspection contractor. The EPA would like to see the Final EIS address the following environmental concerns: F1a

Water Resources

F1b The EPA recommends that the Section 3.2.3.1.1 Regulatory Framework discussion include information on the Clean Water Act (CWA) Section 311 – Oil and Hazardous Substances Liability if fuels will be stored at any project site. The regulations in this part apply to the discharge of oil, which is prohibited by Section 311(b)(3) of the CWA. Prohibited discharges include certain discharges into or upon the navigable waters of the United States.

F1c The Ute tribal government has the ability to set controls on tribal lands and waters. The EPA recommends that the Final EIS address tribal ordinances and tribal council rules and conditions set within the contract for crossing tribal lands.

F1d The descriptions of the water resources in Section 3.2.4.3.2 do not give any indication where these waters are in relationship to the project, nor do the descriptions give any indications of the potential for adverse impacts. For example, the lists of waters are not related to the siting of towers or crossings, and thus, do not provide the reader with a clear understanding of the potential size (e.g., acres of wetlands) of the impacted resource. The EPA recommends that maps at a readable scale showing the water resources impacted by the alternatives be included in the Final EIS.

F1e Table 3-38 lists impaired water bodies, but designated uses are not described. This is important because there is the potential, for example, that additional sedimentation could impact drinking water resources. The EPA recommends adding the designated use of the listed water bodies to this table and indicating whether these uses will be adversely affected by the project.

2

F1a Comment noted.

F1b A description of Clean Water Act (CWA) Section 311 has been added as recommended.

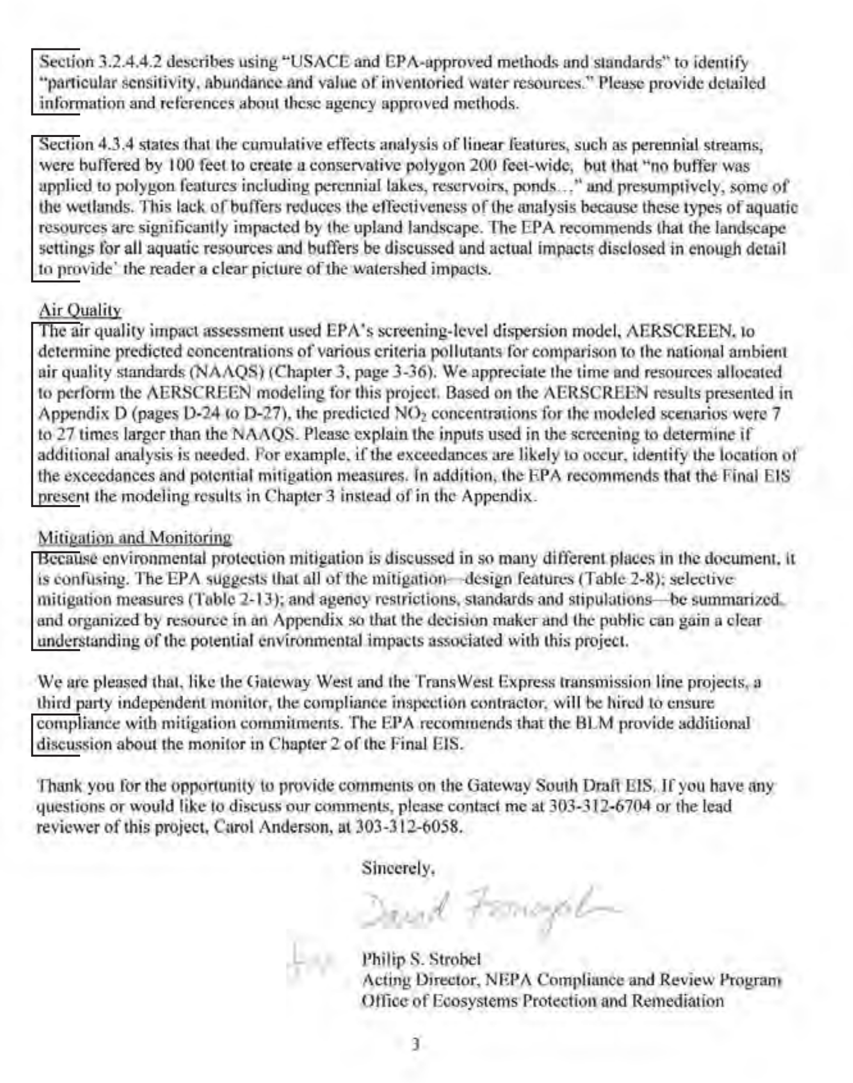
F1c *[Pending additional coordination with the Bureau of Indian Affairs.]*

F1d The geographic scope of the Project makes the mapping of all locations of water resources in the EIS infeasible. Further, specific tower and crossing locations cannot be identified until a route is selected and engineering and design can be performed. Therefore, it is not possible to identify exact locations of potential impacts on water resources. Please refer to the resource mapping in Volume II, specifically Map Set MV-6. Also, Appendix I includes supporting water resources information, including lists of specific water types and the number of crossings by link number. Preconstruction surveys for wetlands and waters will be performed in all areas that could be affected by the Project for the selected route. The results of these surveys will help direct final engineering plans and permitting under applicable regulations.

F1e Appendix I includes supporting water resources information, including a list of impaired waters and their designated use. Potential impact on impaired waters has been included in Section 3. Additional text describing potential effects the Project could have on impaired waters has been added to Section 3.2.4.5.

Comment(s)

F1 **U.S. Environmental Protection Agency (cont.)**



F1f Section 3.2.4.4.2 describes using "USACE and EPA-approved methods and standards" to identify "particular sensitivity, abundance and value of inventoried water resources." Please provide detailed information and references about these agency approved methods.

F1g Section 4.3.4 states that the cumulative effects analysis of linear features, such as perennial streams, were buffered by 100 feet to create a conservative polygon 200 feet-wide, but that "no buffer was applied to polygon features including perennial lakes, reservoirs, ponds…" and presumptively, some of the wetlands. This lack of buffers reduces the effectiveness of the analysis because these types of aquatic resources are significantly impacted by the upland landscape. The EPA recommends that the landscape settings for all aquatic resources and buffers be discussed and actual impacts disclosed in enough detail to provide' the reader a clear picture of the watershed impacts.

Air Quality

F1h The air quality impact assessment used EPA's screening-level dispersion model, AERSCREEN, to determine predicted concentrations of various criteria pollutants for comparison to the national ambient air quality standards (NAAQS) (Chapter 3, page 3-36). We appreciate the time and resources allocated to perform the AERSCREEN modeling for this project. Based on the AERSCREEN results presented in Appendix D (pages D-24 to D-27), the predicted NO_2 concentrations for the modeled scenarios were 7 to 27 times larger than the NAAQS. Please explain the inputs used in the screening to determine if additional analysis is needed. For example, if the exceedances are likely to occur, identify the location of the exceedances and potential mitigation measures. In addition, the EPA recommends that the Final EIS present the modeling results in Chapter 3 instead of in the Appendix.

Mitigation and Monitoring

F1i Because environmental protection mitigation is discussed in so many different places in the document, it is confusing. The EPA suggests that all of the mitigation—design features (Table 2-8); selective mitigation measures (Table 2-13); and agency restrictions, standards and stipulations—be summarized, and organized by resource in an Appendix so that the decision maker and the public can gain a clear understanding of the potential environmental impacts associated with this project.

F1j We are pleased that, like the Gateway West and the TransWest Express transmission line projects, a third party independent monitor, the compliance inspection contractor, will be hired to ensure compliance with mitigation commitments. The EPA recommends that the BLM provide additional discussion about the monitor in Chapter 2 of the Final EIS.

Thank you for the opportunity to provide comments on the Gateway South Draft EIS. If you have any questions or would like to discuss our comments, please contact me at 303-312-6704 or the lead reviewer of this project, Carol Anderson, at 303-312-6058.

Sincerely,

Philip S. Strobel
Acting Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

3

Response(s)

F1f The text in the Draft EIS contained an error and has been corrected in Final EIS to state that methods were developed by the Bureau of Land Management (BLM) in coordination with cooperating agencies.

F1g Buffers were not applied in analysis of cumulative effects to account for impacts on the upland landscape adjacent to water resource features, but rather to create an estimate of area (in acres) of water resources that could be affected in water resource cumulative impacts analysis areas (all subbasins crossed by an alternative route or route variation). Linear features do not have an area and therefore features such as streams were buffered using geographic information systems (GIS) to create a polygon for which cumulative impacts could be assessed.

Direct and indirect impacts of the Project on water resources (including within the buffered area around features) are assessed in Chapter 3 (Section 3.2.4).

F1h Additional explanation of the screening model set-up and emissions has been included in the Final EIS in Sections 3.2.1.4.1 and 3.2.1.4.2. Regarding the recommendation to present the modeling results in Chapter 3 (instead of the appendix), BLM refers to Council on Environmental Quality (CEQ) guidelines (40 Code of Federal Regulations [CFR] 1502.21), which state "agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action." The modeling results are not included in the body of the EIS document.

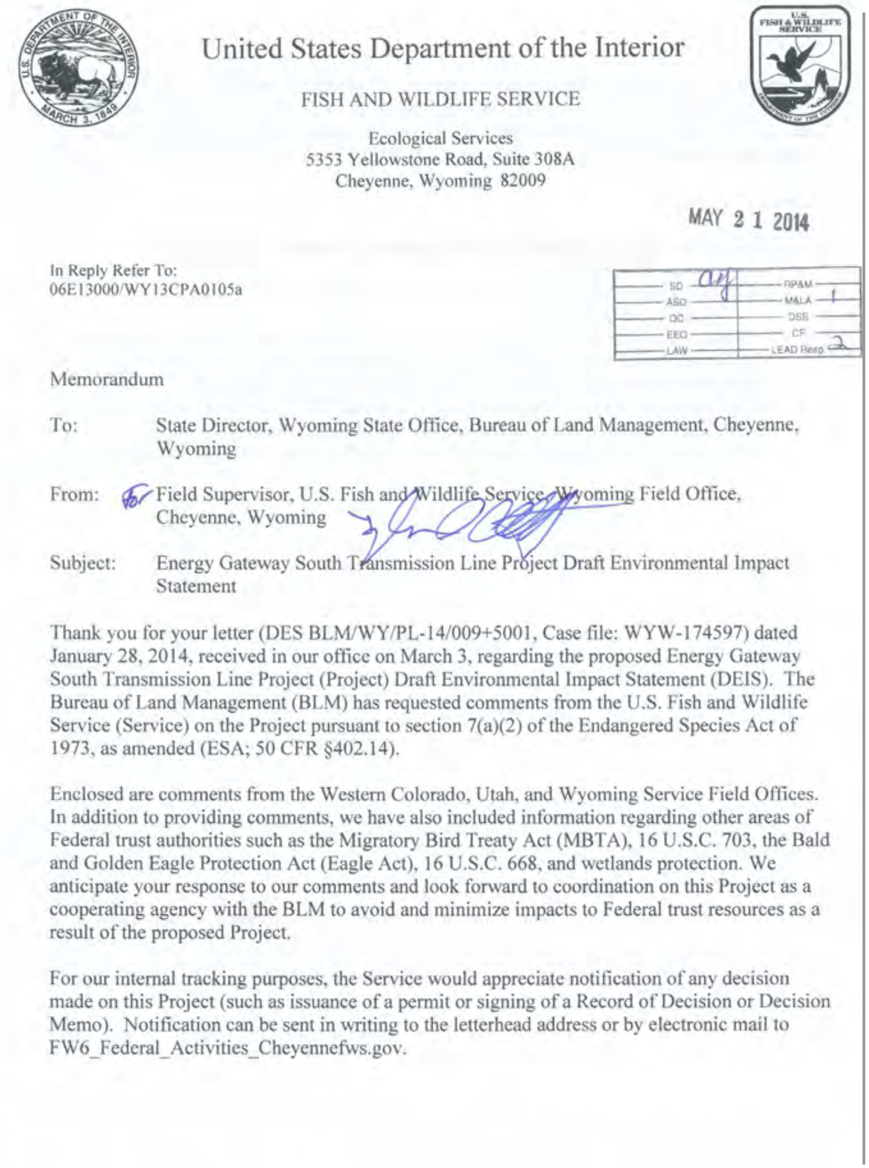
F1i Design features of the Proposed Action and the selective mitigation measures applied in the impact assessment and mitigation planning process are presented in two tables in Chapter 2 (Tables 2-8 and 2-13, respectively with the relevant resources identified in table form); and seasonal and spatial restrictions are detailed (by species/species group) in Appendix J. Reorganization of the information would require a significant effort and could not be accommodated in the Project schedule. It should be noted the plan of development (POD) would be refined during detailed design and engineering once a route has been selected for construction of the project. Refinements must be either consistent with the outcome of the impact assessment and mitigation planning disclosed in this EIS or supplemental National Environmental Policy Act (NEPA) review would be required. The content of the POD, which will be carried forward from and/or refined from the information and data disclosed in the EIS, consists of (1) background information, direction, and implementation plans and (2) detailed mapping to facilitate execution of the design features of the Proposed Action for environmental protection and the selective mitigation measures committed to in the EIS.

F1j The BLM believes the role of the monitor is adequately discussed in Section 2.4 of the EIS. The roles and responsibilities of the personnel to be involved in implementation of the BLM's direction regarding specifications and requirements for construction, operation, and maintenance on federally administered lands, including the compliance inspection contractor and environmental monitors, will be detailed in the POD.

Comment(s)

Response(s)

F2 **U.S. Fish and Wildlife Service**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

MAY 21 2014

In Reply Refer To:
06E13000/WY13CPA0105a

SD af — RP&M
ASO — M&LA 1
QC — DSS
EEO — CF
LAW — LEAD Resp 2

Memorandum

To: State Director, Wyoming State Office, Bureau of Land Management, Cheyenne, Wyoming

From: for Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming

Subject: Energy Gateway South Transmission Line Project Draft Environmental Impact Statement

Thank you for your letter (DES BLM/WY/PL-14/009+5001, Case file: WYW-174597) dated January 28, 2014, received in our office on March 3, regarding the proposed Energy Gateway South Transmission Line Project (Project) Draft Environmental Impact Statement (DEIS). The Bureau of Land Management (BLM) has requested comments from the U.S. Fish and Wildlife Service (Service) on the Project pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA; 50 CFR §402.14).

Enclosed are comments from the Western Colorado, Utah, and Wyoming Service Field Offices. In addition to providing comments, we have also included information regarding other areas of Federal trust authorities such as the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703, the Bald and Golden Eagle Protection Act (Eagle Act), 16 U.S.C. 668, and wetlands protection. We anticipate your response to our comments and look forward to coordination on this Project as a cooperating agency with the BLM to avoid and minimize impacts to Federal trust resources as a result of the proposed Project.

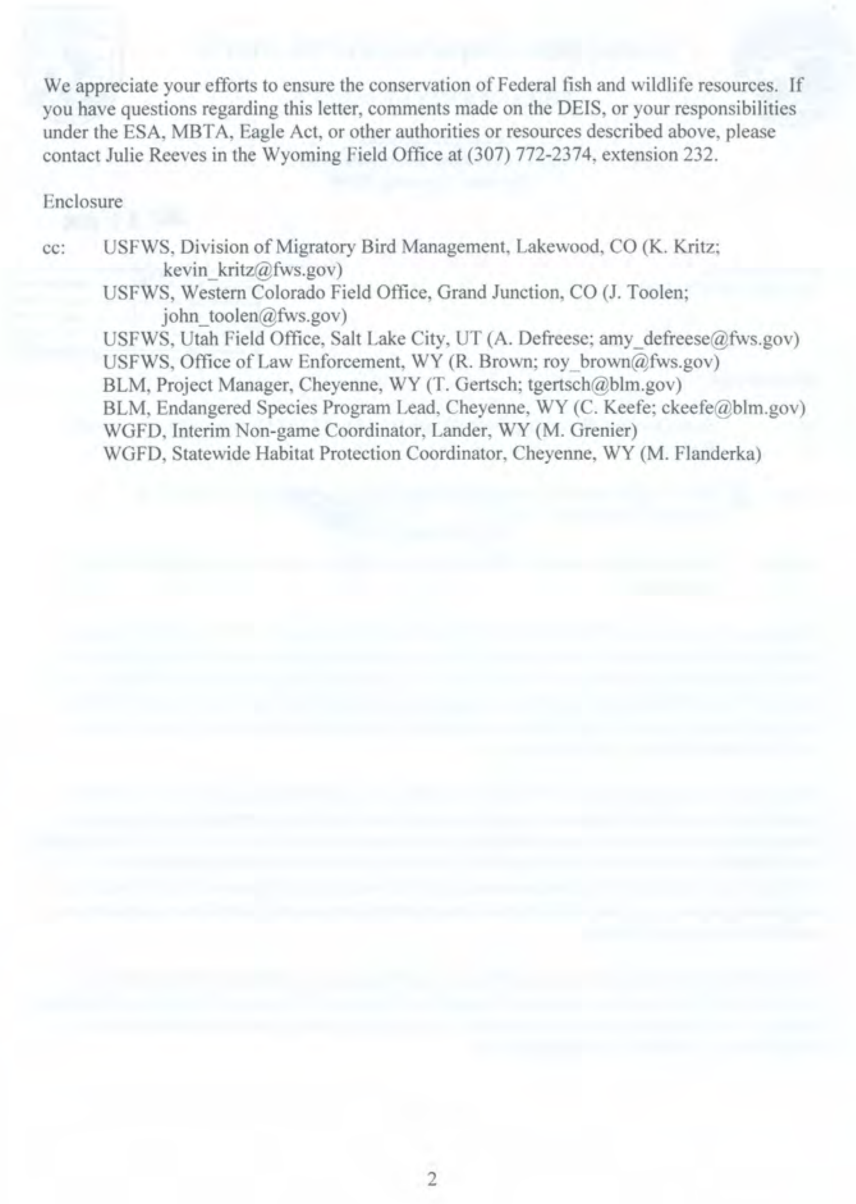
For our internal tracking purposes, the Service would appreciate notification of any decision made on this Project (such as issuance of a permit or signing of a Record of Decision or Decision Memo). Notification can be sent in writing to the letterhead address or by electronic mail to FW6_Federal_Activities_Cheyennefws.gov.

Comment(s)

Response(s)

F2

U.S. Fish and Wildlife Service (cont.)



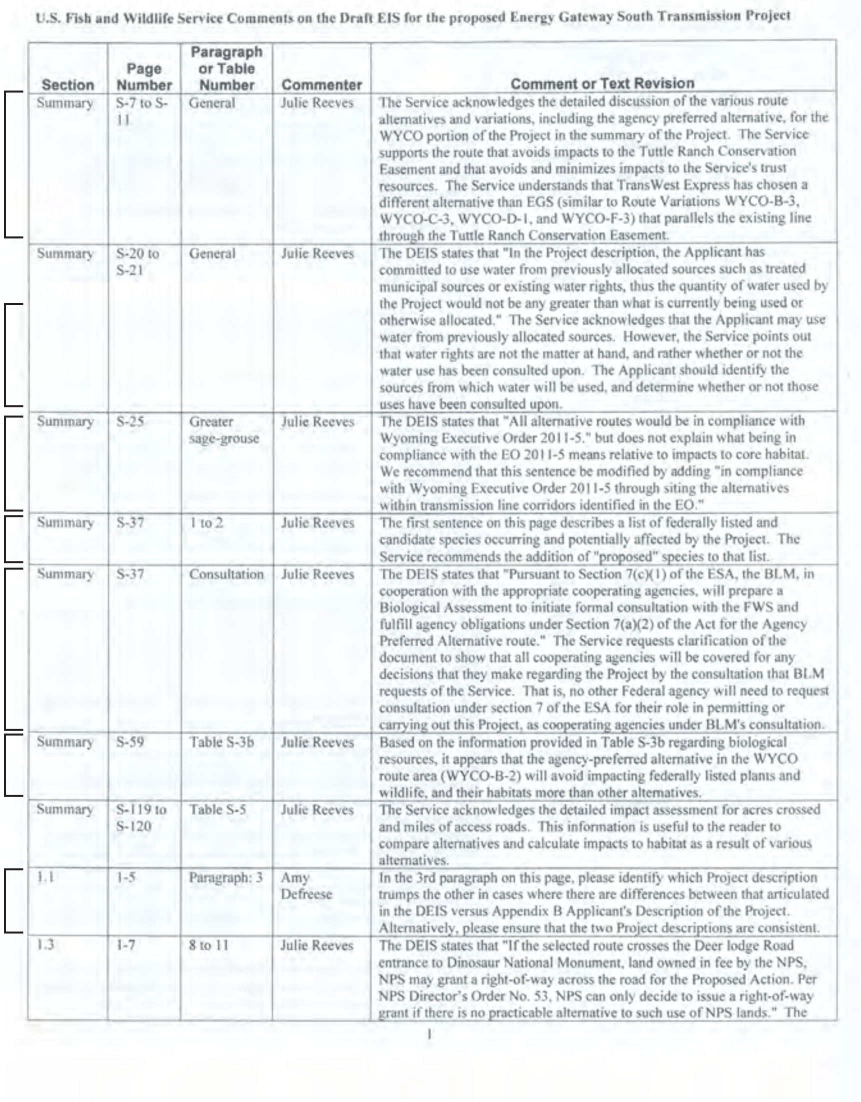
We appreciate your efforts to ensure the conservation of Federal fish and wildlife resources. If you have questions regarding this letter, comments made on the DEIS, or your responsibilities under the ESA, MBTA, Eagle Act, or other authorities or resources described above, please contact Julie Reeves in the Wyoming Field Office at (307) 772-2374, extension 232.

Enclosure

cc: USFWS, Division of Migratory Bird Management, Lakewood, CO (K. Kritz; kevin_kritz@fws.gov)
USFWS, Western Colorado Field Office, Grand Junction, CO (J. Toolen; john_toolen@fws.gov)
USFWS, Utah Field Office, Salt Lake City, UT (A. Defreese; amy_defreese@fws.gov)
USFWS, Office of Law Enforcement, WY (R. Brown; roy_brown@fws.gov)
BLM, Project Manager, Cheyenne, WY (T. Gertsch; tgertsch@blm.gov)
BLM, Endangered Species Program Lead, Cheyenne, WY (C. Keefe; ckeefe@blm.gov)
WGFD, Interim Non-game Coordinator, Lander, WY (M. Grenier)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (M. Flanderka)

Comment(s)

F2 U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2a	Summary	S-7 to S-11	General	Julie Reeves	The Service acknowledges the detailed discussion of the various route alternatives and variations, including the agency preferred alternative, for the WYCO portion of the Project in the summary of the Project. The Service supports the route that avoids impacts to the Tuttle Ranch Conservation Easement and that avoids and minimizes impacts to the Service's trust resources. The Service understands that TransWest Express has chosen a different alternative than EGS (similar to Route Variations WYCO-B-3, WYCO-C-3, WYCO-D-1, and WYCO-F-3) that parallels the existing line through the Tuttle Ranch Conservation Easement.
F2b	Summary	S-20 to S-21	General	Julie Reeves	The DEIS states that "In the Project description, the Applicant has committed to use water from previously allocated sources such as treated municipal sources or existing water rights, thus the quantity of water used by the Project would not be any greater than what is currently being used or otherwise allocated." The Service acknowledges that the Applicant may use water from previously allocated sources. However, the Service points out that water rights are not the matter at hand, and rather whether or not the water use has been consulted upon. The Applicant should identify the sources from which water will be used, and determine whether or not those uses have been consulted upon.
F2c	Summary	S-25	Greater sage-grouse	Julie Reeves	The DEIS states that "All alternative routes would be in compliance with Wyoming Executive Order 2011-5." but does not explain what being in compliance with the EO 2011-5 means relative to impacts to core habitat. We recommend that this sentence be modified by adding "in compliance with Wyoming Executive Order 2011-5 through siting the alternatives within transmission line corridors identified in the EO."
F2d	Summary	S-37	1 to 2	Julie Reeves	The first sentence on this page describes a list of federally listed and candidate species occurring and potentially affected by the Project. The Service recommends the addition of "proposed" species to that list.
F2e	Summary	S-37	Consultation	Julie Reeves	The DEIS states that "Pursuant to Section 7(c)(1) of the ESA, the BLM, in cooperation with the appropriate cooperating agencies, will prepare a Biological Assessment to initiate formal consultation with the FWS and fulfill agency obligations under Section 7(a)(2) of the Act for the Agency Preferred Alternative route." The Service requests clarification of the document to show that all cooperating agencies will be covered for any decisions that they make regarding the Project by the consultation that BLM requests of the Service. That is, no other Federal agency will need to request consultation under section 7 of the ESA for their role in permitting or carrying out this Project, as cooperating agencies under BLM's consultation.
F2f	Summary	S-59	Table S-3b	Julie Reeves	Based on the information provided in Table S-3b regarding biological resources, it appears that the agency-preferred alternative in the WYCO route area (WYCO-B-2) will avoid impacting federally listed plants and wildlife, and their habitats more than other alternatives.
	Summary	S-119 to S-120	Table S-5	Julie Reeves	The Service acknowledges the detailed impact assessment for acres crossed and miles of access roads. This information is useful to the reader to compare alternatives and calculate impacts to habitat as a result of various alternatives.
F2g	1.1	1-5	Paragraph: 3	Amy Defreese	In the 3rd paragraph on this page, please identify which Project description trumps the other in cases where there are differences between that articulated in the DEIS versus Appendix B Applicant's Description of the Project. Alternatively, please ensure that the two Project descriptions are consistent.
	1.3	1-7	8 to 11	Julie Reeves	The DEIS states that "If the selected route crosses the Deer lodge Road entrance to Dinosaur National Monument, land owned in fee by the NPS, NPS may grant a right-of-way across the road for the Proposed Action. Per NPS Director's Order No. 53, NPS can only decide to issue a right-of-way grant if there is no practicable alternative to such use of NPS lands." The

1

Response(s)

F2a Comment and route preference noted.

F2b Discussions with the BLM and the Wyoming State Engineer have indicated that use of water from municipal sources would not be considered new depletions, as municipal use is already considered consumptive. Only changes in use from non-consumptive (e.g., agriculture) to consumptive use would be considered a new depletion. As specified in Appendix B of the Final EIS, PacifiCorp, doing business as Rocky Mountain Power (Applicant), would procure water required for construction from existing municipal or commercial sources or under temporary water use agreements with landowners holding existing water rights. Whether or not consultation under the Endangered Species Act (ESA) for these sources has already occurred will either be determined during the Section 7 consultation process, or if specific sources have not been identified prior to submittal of the final Biological Assessment (BA), potential water depletions to the Platte and Colorado Rivers will be calculated based on construction needs in these watersheds and depletion fees will be paid into the respective recovery programs, if and as appropriate. Also, please note that additional analysis and discussion has been included in Appendix J for all species potentially impacted by the water depletions.

F2c The text has been modified as recommended. The sentence now reads: "All alternative routes and route variations would be in compliance with Wyoming Executive Order 2011-5 through siting the alternative routes and route variations within transmission line corridors identified in the Executive order."

F2d Text has been edited as requested.

F2e Clarifying text has been added as requested.

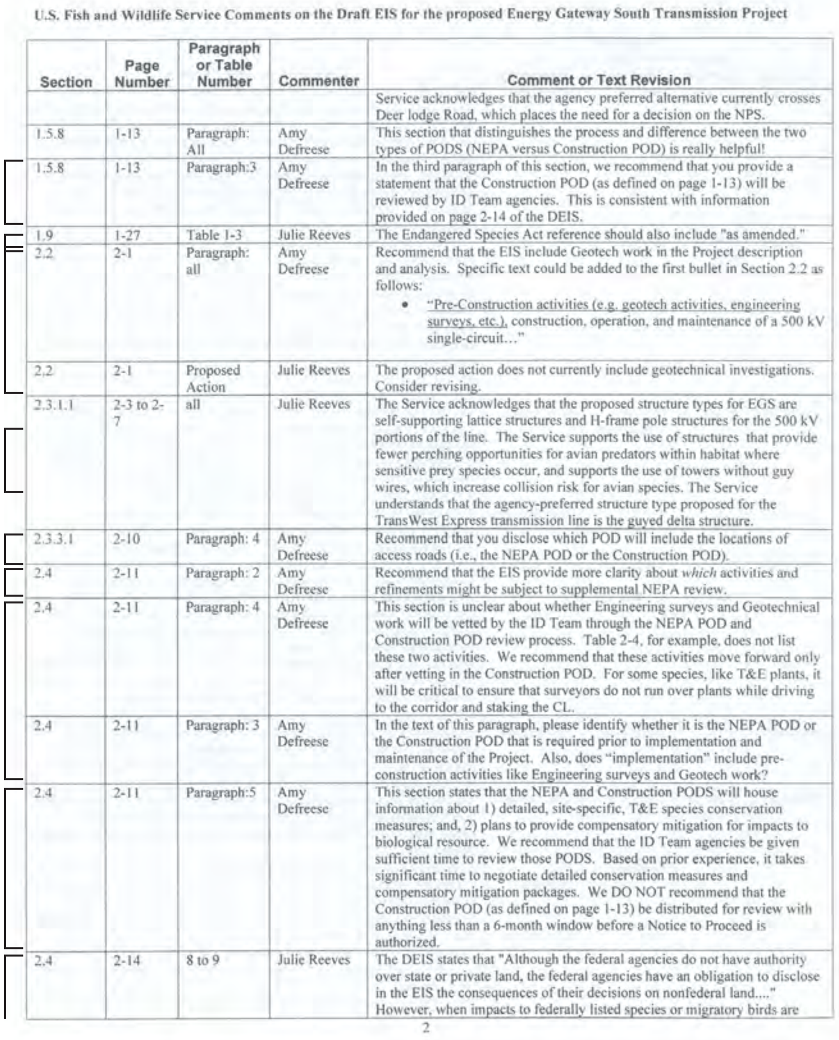
F2f Comment noted.

F2g The project description presented in Appendix B is a more detailed description of the Project, provided by the Applicant. The descriptions in Chapters 1 and 2 of the EIS are a summary of the project features relevant to the analysis that are described in Appendix B. Thus, the descriptions of the Project in the body of the EIS and the appendices are intended to be the same.

Comment(s)

Response(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
					Service acknowledges that the agency preferred alternative currently crosses Deer lodge Road, which places the need for a decision on the NPS.
	1.5.8	1-13	Paragraph: All	Amy Defreese	This section that distinguishes the process and difference between the two types of PODS (NEPA versus Construction POD) is really helpful!
F2h	1.5.8	1-13	Paragraph:3	Amy Defreese	In the third paragraph of this section, we recommend that you provide a statement that the Construction POD (as defined on page 1-13) will be reviewed by ID Team agencies. This is consistent with information provided on page 2-14 of the DEIS.
F2i	1.9	1-27	Table 1-3	Julie Reeves	The Endangered Species Act reference should also include "as amended."
F2j	2.2	2-1	Paragraph: all	Amy Defreese	Recommend that the EIS include Geotech work in the Project description and analysis. Specific text could be added to the first bullet in Section 2.2 as follows: • "Pre-Construction activities (e.g. geotech activities, engineering surveys, etc.), construction, operation, and maintenance of a 500 kV single-circuit…"
	2.2	2-1	Proposed Action	Julie Reeves	The proposed action does not currently include geotechnical investigations. Consider revising.
F2k	2.3.1.1	2-3 to 2-7	all	Julie Reeves	The Service acknowledges that the proposed structure types for EGS are self-supporting lattice structures and H-frame pole structures for the 500 kV portions of the line. The Service supports the use of structures that provide fewer perching opportunities for avian predators within habitat where sensitive prey species occur, and supports the use of towers without guy wires, which increase collision risk for avian species. The Service understands that the agency-preferred structure type proposed for the TransWest Express transmission line is the guyed delta structure.
F2l	2.3.3.1	2-10	Paragraph: 4	Amy Defreese	Recommend that you disclose which POD will include the locations of access roads (i.e., the NEPA POD or the Construction POD).
F2m	2.4	2-11	Paragraph: 2	Amy Defreese	Recommend that the EIS provide more clarity about *which* activities and refinements might be subject to supplemental NEPA review.
F2n	2.4	2-11	Paragraph: 4	Amy Defreese	This section is unclear about whether Engineering surveys and Geotechnical work will be vetted by the ID Team through the NEPA POD and Construction POD review process. Table 2-4, for example, does not list these two activities. We recommend that these activities move forward only after vetting in the Construction POD. For some species, like T&E plants, it will be critical to ensure that surveyors do not run over plants while driving to the corridor and staking the CL.
	2.4	2-11	Paragraph: 3	Amy Defreese	In the text of this paragraph, please identify whether it is the NEPA POD or the Construction POD that is required prior to implementation and maintenance of the Project. Also, does "implementation" include pre-construction activities like Engineering surveys and Geotech work?
F2o	2.4	2-11	Paragraph:5	Amy Defreese	This section states that the NEPA and Construction PODS will house information about 1) detailed, site-specific, T&E species conservation measures; and, 2) plans to provide compensatory mitigation for impacts to biological resource. We recommend that the ID Team agencies be given sufficient time to review those PODS. Based on prior experience, it takes significant time to negotiate detailed conservation measures and compensatory mitigation packages. We DO NOT recommend that the Construction POD (as defined on page 1-13) be distributed for review with anything less than a 6-month window before a Notice to Proceed is authorized.
F2p	2.4	2-14	8 to 9	Julie Reeves	The DEIS states that "Although the federal agencies do not have authority over state or private land, the federal agencies have an obligation to disclose in the EIS the consequences of their decisions on nonfederal land...." However, when impacts to federally listed species or migratory birds are

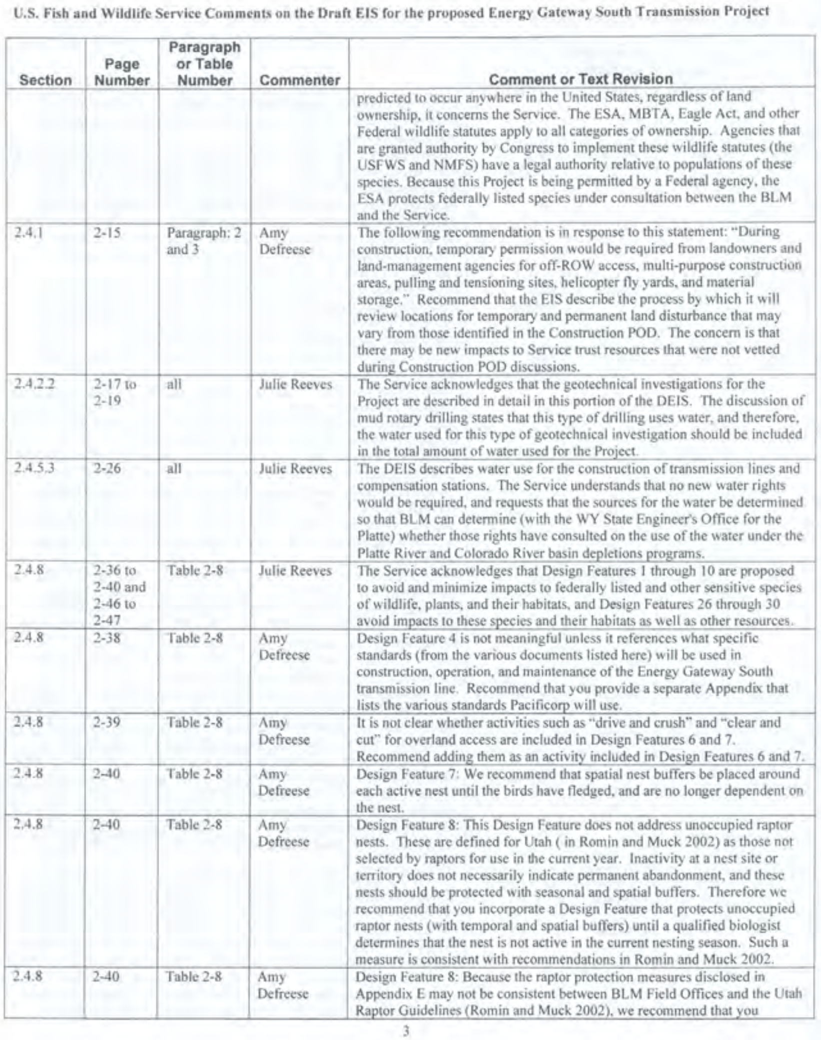
2

F2h	The text has been modified as recommended. The additional sentence reads: "The construction POD will be reviewed by the Agency Interdisciplinary Team and cooperating agencies (listed in Section 1.7.4) having jurisdictional or regulatory responsibilities and/or specialized knowledge for the Project."
F2i	The text has been modified as recommended. The law/regulation now reads: "Endangered Species Act of 1973, as amended."
F2j	The geotechnical investigation is discussed in Section 2.4.2.2. The Applicant considers the geotechnical investigation and other preconstruction activities as the first step in construction.
F2k	Since publication of the Draft EIS, the Applicant has reused their project description to propose both guyed and self-supporting tangent structure configurations as the predominant type of structures (refer to Section 2.3.1.1.). The analysis in the Final EIS has been updated to reflect the change in predominant structure types
F2l	Edited as requested.
F2m	The BLM has coordinated with other land-managing agencies to ensure the analysis included in the EIS is sufficient to support their decision-making. The BLM does not anticipate that any supplemental analysis will be required. The process for granting any requests for variances to the right-of-way grant (BLM) or special-use authorization (U.S. Forest Service [USFS]) will be established in the NEPA POD to be developed in coordination with the cooperating agencies and included as a condition of the Records of Decision (ROD). If any variances are requested outside of the bounds of analysis in this EIS, supplemental analysis may be required.
F2n	These requirements will be established in the NEPA POD to be developed in coordination with the cooperating agencies and included as a condition of the BLM and USFS RODs.
F2o	Comment noted.
F2p	The text has been edited to specify that the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act also apply, regardless of land jurisdiction or ownership.

Comment(s)

Response(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2p					predicted to occur anywhere in the United States, regardless of land ownership, it concerns the Service. The ESA, MBTA, Eagle Act, and other Federal wildlife statutes apply to all categories of ownership. Agencies that are granted authority by Congress to implement these wildlife statutes (the USFWS and NMFS) have a legal authority relative to populations of these species. Because this Project is being permitted by a Federal agency, the ESA protects federally listed species under consultation between the BLM and the Service.
F2q	2.4.1	2-15	Paragraph: 2 and 3	Amy Defreese	The following recommendation is in response to this statement: "During construction, temporary permission would be required from landowners and land-management agencies for off-ROW access, multi-purpose construction areas, pulling and tensioning sites, helicopter fly yards, and material storage." Recommend that the EIS describe the process by which it will review locations for temporary and permanent land disturbance that may vary from those identified in the Construction POD. The concern is that there may be new impacts to Service trust resources that were not vetted during Construction POD discussions.
F2r	2.4.2.2	2-17 to 2-19	all	Julie Reeves	The Service acknowledges that the geotechnical investigations for the Project are described in detail in this portion of the DEIS. The discussion of mud rotary drilling states that this type of drilling uses water, and therefore, the water used for this type of geotechnical investigation should be included in the total amount of water used for the Project.
F2s	2.4.5.3	2-26	all	Julie Reeves	The DEIS describes water use for the construction of transmission lines and compensation stations. The Service understands that no new water rights would be required, and requests that the sources for the water be determined so that BLM can determine (with the WY State Engineer's Office for the Platte) whether those rights have consulted on the use of the water under the Platte River and Colorado River basin depletions programs.
	2.4.8	2-36 to 2-40 and 2-46 to 2-47	Table 2-8	Julie Reeves	The Service acknowledges that Design Features 1 through 10 are proposed to avoid and minimize impacts to federally listed and other sensitive species of wildlife, plants, and their habitats, and Design Features 26 through 30 avoid impacts to these species and their habitats as well as other resources.
F2t	2.4.8	2-38	Table 2-8	Amy Defreese	Design Feature 4 is not meaningful unless it references what specific standards (from the various documents listed here) will be used in construction, operation, and maintenance of the Energy Gateway South transmission line. Recommend that you provide a separate Appendix that lists the various standards Pacificorp will use.
F2u	2.4.8	2-39	Table 2-8	Amy Defreese	It is not clear whether activities such as "drive and crush" and "clear and cut" for overland access are included in Design Features 6 and 7. Recommend adding them as an activity included in Design Features 6 and 7.
F2v	2.4.8	2-40	Table 2-8	Amy Defreese	Design Feature 7: We recommend that spatial nest buffers be placed around each active nest until the birds have fledged, and are no longer dependent on the nest.
F2w	2.4.8	2-40	Table 2-8	Amy Defreese	Design Feature 8: This Design Feature does not address unoccupied raptor nests. These are defined for Utah (in Romin and Muck 2002) as those not selected by raptors for use in the current year. Inactivity at a nest site or territory does not necessarily indicate permanent abandonment, and these nests should be protected with seasonal and spatial buffers. Therefore we recommend that you incorporate a Design Feature that protects unoccupied raptor nests (with temporal and spatial buffers) until a qualified biologist determines that the nest is not active in the current nesting season. Such a measure is consistent with recommendations in Romin and Muck 2002.
F2x	2.4.8	2-40	Table 2-8	Amy Defreese	Design Feature 8: Because the raptor protection measures disclosed in Appendix E may not be consistent between BLM Field Offices and the Utah Raptor Guidelines (Romin and Muck 2002), we recommend that you

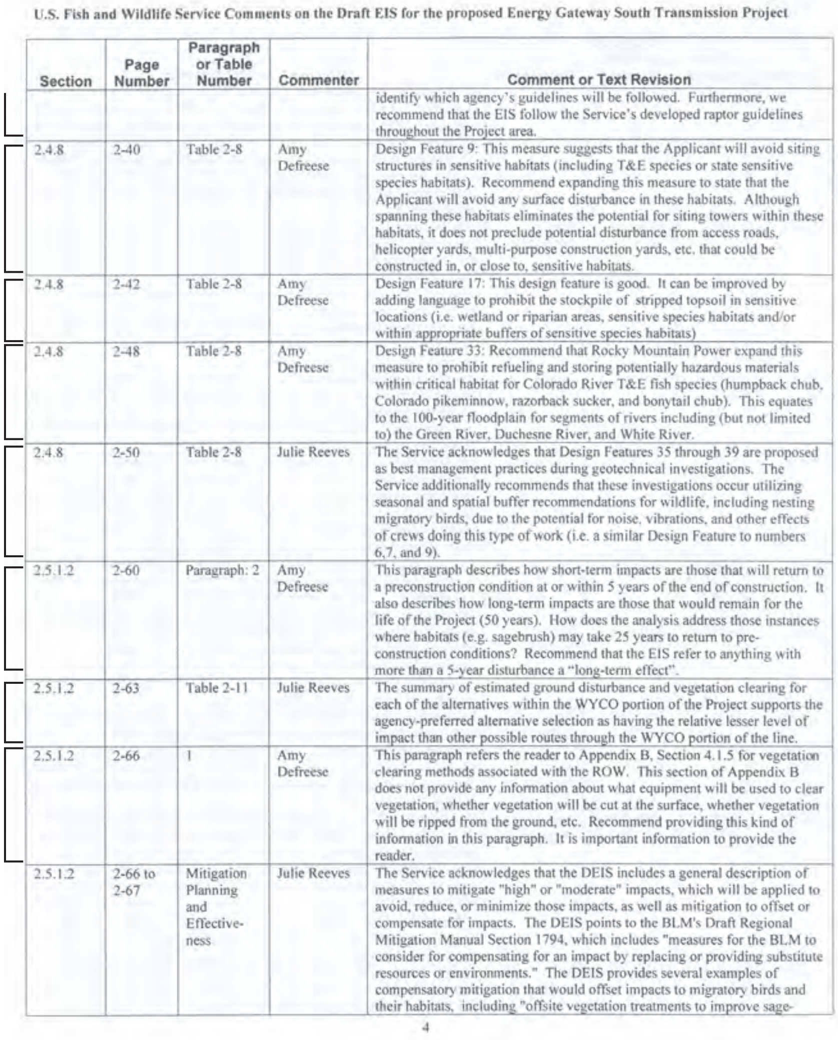
3

F2q	See response to Comment F2m.
F2r	Mud rotary drilling is one of several identified drilling methods that may be used. Site-specific selection of drilling methods has not been completed at this time. However, water use for mud rotary drilling is assumed in overall water use estimations for the Project.
F2s	The BLM is coordinating with the Wyoming State Engineer's Office, the Upper Colorado River Endangered Fish Recovery Program, and the U.S. Fish and Wildlife Service (FWS) regarding this issue through the Section 7 consultation process. Specific water sources have not been identified at this time. However, the Applicant intends to include a commitment to use water sources subject to previous consultation as a conservation measure.
F2t	The BLM understands the Applicant has worked with the FWS, Avian Power Line Interaction Committee, and other agencies to develop an Avian Protection Plan for their facilities and distribution and transmission lines in their service territory. The Avian Protection Plan and Avian Power Line Interaction Committee guidelines for protection and collisions are referenced at a high level in the EIS. Project-specific standards, methods, and measures (including avian-specific mitigation) will be described in the POD to be developed in coordination with cooperating agencies, including FWS and state wildlife agencies.
F2u	Drive-and-crush and clear-and-cut overland access techniques are not inherent in Design Features 6 and 7. Overland access is discussed in Design Feature 18 and Selective Mitigation Measure 13.
F2v	Edited as requested.
F2w	The BLM understands that nest surveys of the selected route will identify both occupied and unoccupied nests. Any unoccupied nest must be cleared before construction can commence in a certain area. Design Feature 8 was modified to incorporate unoccupied nests, as requested.
F2x	Agency guidelines for raptor protection will be identified in the Wildlife Resources Conservation Plan developed for the POD. These guidelines will be developed in cooperation with FWS, the Applicant, and cooperating agencies, and will be part of the consultation with the FWS.

Comment(s)

Response(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2x					identify which agency's guidelines will be followed. Furthermore, we recommend that the EIS follow the Service's developed raptor guidelines throughout the Project area.
F2y	2.4.8	2-40	Table 2-8	Amy Defreese	Design Feature 9: This measure suggests that the Applicant will avoid siting structures in sensitive habitats (including T&E species or state sensitive species habitats). Recommend expanding this measure to state that the Applicant will avoid any surface disturbance in these habitats. Although spanning these habitats eliminates the potential for siting towers within these habitats, it does not preclude potential disturbance from access roads, helicopter yards, multi-purpose construction yards, etc. that could be constructed in, or close to, sensitive habitats.
F2z	2.4.8	2-42	Table 2-8	Amy Defreese	Design Feature 17: This design feature is good. It can be improved by adding language to prohibit the stockpile of stripped topsoil in sensitive locations (i.e. wetland or riparian areas, sensitive species habitats and/or within appropriate buffers of sensitive species habitats)
F2aa	2.4.8	2-48	Table 2-8	Amy Defreese	Design Feature 33: Recommend that Rocky Mountain Power expand this measure to prohibit refueling and storing potentially hazardous materials within critical habitat for Colorado River T&E fish species (humpback chub, Colorado pikeminnow, razorback sucker, and bonytail chub). This equates to the 100-year floodplain for segments of rivers including (but not limited to) the Green River, Duchesne River, and White River.
F2ab	2.4.8	2-50	Table 2-8	Julie Reeves	The Service acknowledges that Design Features 35 through 39 are proposed as best management practices during geotechnical investigations. The Service additionally recommends that these investigations occur utilizing seasonal and spatial buffer recommendations for wildlife, including nesting migratory birds, due to the potential for noise, vibrations, and other effects of crews doing this type of work (i.e. a similar Design Feature to numbers 6,7, and 9).
F2ac	2.5.1.2	2-60	Paragraph: 2	Amy Defreese	This paragraph describes how short-term impacts are those that will return to a preconstruction condition at or within 5 years of the end of construction. It also describes how long-term impacts are those that would remain for the life of the Project (50 years). How does the analysis address those instances where habitats (e.g. sagebrush) may take 25 years to return to pre-construction conditions? Recommend that the EIS refer to anything with more than a 5-year disturbance a "long-term effect".
F2ad	2.5.1.2	2-63	Table 2-11	Julie Reeves	The summary of estimated ground disturbance and vegetation clearing for each of the alternatives within the WYCO portion of the Project supports the agency-preferred alternative selection as having the relative lesser level of impact than other possible routes through the WYCO portion of the line.
F2ae	2.5.1.2	2-66	1	Amy Defreese	This paragraph refers the reader to Appendix B, Section 4.1.5 for vegetation clearing methods associated with the ROW. This section of Appendix B does not provide any information about what equipment will be used to clear vegetation, whether vegetation will be cut at the surface, whether vegetation will be ripped from the ground, etc. Recommend providing this kind of information in this paragraph. It is important information to provide the reader.
	2.5.1.2	2-66 to 2-67	Mitigation Planning and Effectiveness	Julie Reeves	The Service acknowledges that the DEIS includes a general description of measures to mitigate "high" or "moderate" impacts, which will be applied to avoid, reduce, or minimize those impacts, as well as mitigation to offset or compensate for impacts. The DEIS points to the BLM's Draft Regional Mitigation Manual Section 1794, which includes "measures for the BLM to consider for compensating for an impact by replacing or providing substitute resources or environments." The DEIS provides several examples of compensatory mitigation that would offset impacts to migratory birds and their habitats, including "offsite vegetation treatments to improve sage-

4

F2y Limiting surface disturbance related to access roads and construction areas is addressed in the Applicant's project description (for example, Sections 2.3.3 and 2.4.2.3), including Design Features 1, 3, and 6 (which are accepted by the Applicant as part of the project description), and through application, where appropriate, of Selective Mitigation Measures 1, 2, 5, 7, 12, and 15 (refer to Table 2-13).

F2z As described in Design Feature 2, a reclamation, revegetation, and monitoring framework plan would identify reclamation stipulations such as topsoil stripping and storage.

F2aa Mitigation measures beyond those identified by the BLM in the EIS would developed through the Section 7 consultation with FWS in the BA and would be included in the NEPA POD.

F2ab All other design features of the Proposed Action for environmental protection are applicable to geotechnical investigations. However, Design Features 35 through 39 are specific to geotechnical investigations.

F2ac For the purposes of analysis short-term impacts are assumed to persist for up to 5 years. Environmental effects that would be anticipated to remain for greater than 5 years and through the life of the Project (approximately 50 years) are indeed considered long-term impacts for purposes of the analysis.

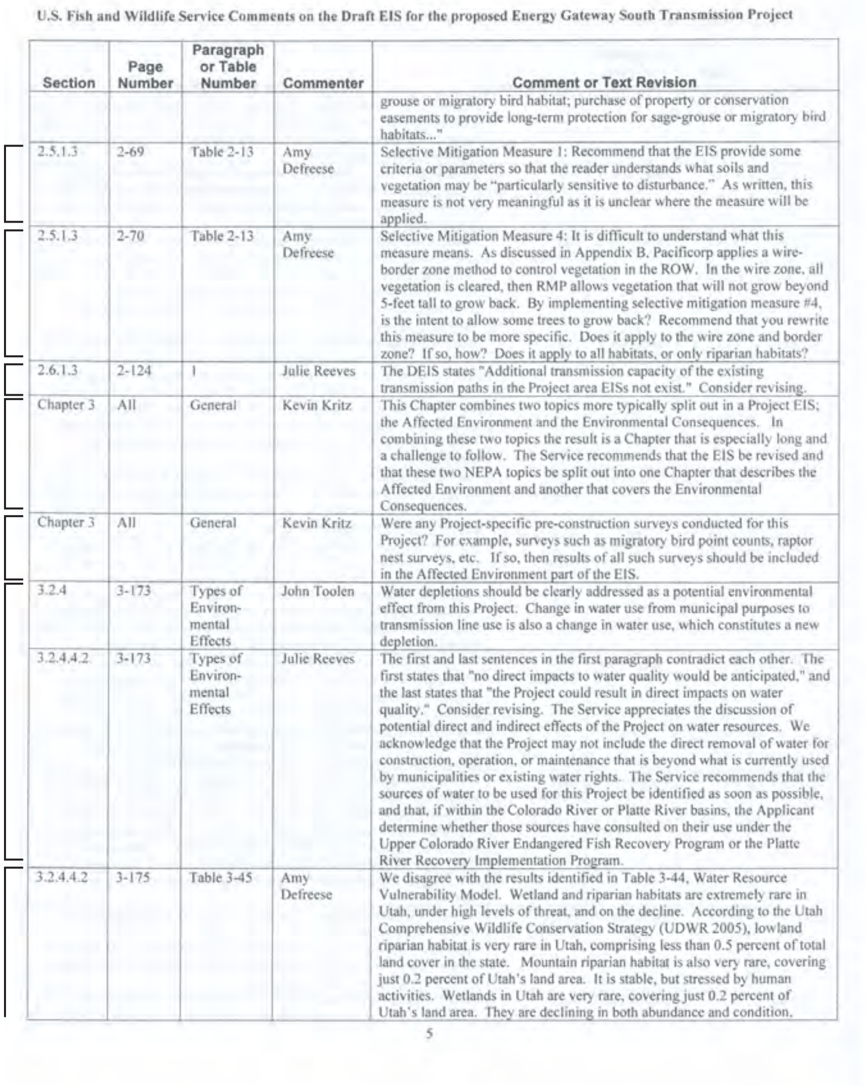
F2ad Comment noted.

F2ae Vegetation will be removed using mechanical equipment such as chain saws, weed trimmers, rakes, shovels, brush hooks, and mowers. Clearing efforts in heavy growth areas will use equipment such as a Hydro-Ax excavator mounted brush mower, or similar. The duration of activities and the size of crew and equipment required will be dependent on the amount and size of the vegetation to be pruned or removed. The specific equipment to be used cannot be known until an EPC contract is awarded. This level of detail will be addressed in the construction POD.

In or adjacent to the right-of-way, mature vegetation will be removed under or near the conductors to provide adequate electrical clearance, as required by the North American Electric Reliability Corporation and Department of Energy. Typically, only large trees or fast growing vegetation will be pruned or removed. Slash will be left in place or disposed of in accordance with the requirements of the land-management agency or landowner.

Comment(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
					grouse or migratory bird habitat; purchase of property or conservation easements to provide long-term protection for sage-grouse or migratory bird habitats..."
F2af	2.5.1.3	2-69	Table 2-13	Amy Defreese	Selective Mitigation Measure 1: Recommend that the EIS provide some criteria or parameters so that the reader understands what soils and vegetation may be "particularly sensitive to disturbance." As written, this measure is not very meaningful as it is unclear where the measure will be applied.
F2ag	2.5.1.3	2-70	Table 2-13	Amy Defreese	Selective Mitigation Measure 4: It is difficult to understand what this measure means. As discussed in Appendix B, Pacificorp applies a wire-border zone method to control vegetation in the ROW. In the wire zone, all vegetation is cleared, then RMP allows vegetation that will not grow beyond 5-feet tall to grow back. By implementing selective mitigation measure #4, is the intent to allow some trees to grow back? Recommend that you rewrite this measure to be more specific. Does it apply to the wire zone and border zone? If so, how? Does it apply to all habitats, or only riparian habitats?
F2ah	2.6.1.3	2-124	1	Julie Reeves	The DEIS states "Additional transmission capacity of the existing transmission paths in the Project area EISs not exist." Consider revising.
F2ai	Chapter 3	All	General	Kevin Kritz	This Chapter combines two topics more typically split out in a Project EIS; the Affected Environment and the Environmental Consequences. In combining these two topics the result is a Chapter that is especially long and a challenge to follow. The Service recommends that the EIS be revised and that these two NEPA topics be split out into one Chapter that describes the Affected Environment and another that covers the Environmental Consequences.
F2aj	Chapter 3	All	General	Kevin Kritz	Were any Project-specific pre-construction surveys conducted for this Project? For example, surveys such as migratory bird point counts, raptor nest surveys, etc. If so, then results of all such surveys should be included in the Affected Environment part of the EIS.
F2ak	3.2.4	3-173	Types of Environmental Effects	John Toolen	Water depletions should be clearly addressed as a potential environmental effect from this Project. Change in water use from municipal purposes to transmission line use is also a change in water use, which constitutes a new depletion.
	3.2.4.4.2	3-173	Types of Environmental Effects	Julie Reeves	The first and last sentences in the first paragraph contradict each other. The first states that "no direct impacts to water quality would be anticipated," and the last states that "the Project could result in direct impacts on water quality." Consider revising. The Service appreciates the discussion of potential direct and indirect effects of the Project on water resources. We acknowledge that the Project may not include the direct removal of water for construction, operation, or maintenance that is beyond what is currently used by municipalities or existing water rights. The Service recommends that the sources of water to be used for this Project be identified as soon as possible, and that, if within the Colorado River or Platte River basins, the Applicant determine whether those sources have consulted on their use under the Upper Colorado River Endangered Fish Recovery Program or the Platte River Recovery Implementation Program.
F2al	3.2.4.4.2	3-175	Table 3-45	Amy Defreese	We disagree with the results identified in Table 3-44, Water Resource Vulnerability Model. Wetland and riparian habitats are extremely rare in Utah, under high levels of threat, and on the decline. According to the Utah Comprehensive Wildlife Conservation Strategy (UDWR 2005), lowland riparian habitat is very rare in Utah, comprising less than 0.5 percent of total land cover in the state. Mountain riparian habitat is also very rare, covering just 0.2 percent of Utah's land area. It is stable, but stressed by human activities. Wetlands in Utah are very rare, covering just 0.2 percent of Utah's land area. They are declining in both abundance and condition.

5

Response(s)

F2af As discussed in Section 2.5.1.2, the application of selective mitigation measures was considered in the analysis residual impacts on various resources. How mitigation was applied for the various resources is discussed for each resource in Chapter 3 as part of their respective discussions for study methodologies. The selective mitigation measures table (Table 2-13) has also been edited to include a summary (as identified in Chapter 3 by the various resources) of general criteria used to apply mitigation measures.

F2ag The wire border zone is the typical practice the Applicant uses for vegetation management. In select areas where impacts could be further reduced by minimizing tree removal in the right-of-way, to the extent practical, this selective mitigation measure would be implemented.

F2ah The sentence has been revised for clarity.

F2ai The decision to combine the Affected Environment and the Environmental Consequences was made early in the preparation of the EIS, and was made in coordination with the Agency Interdisciplinary Team, which includes cooperating agencies. The intent was to present the description of the resource issues and resource(s) affected and the potential environmental effects for a particular area in a similar area (e.g., by state) of the document. Reorganizing the document at this stage of preparation would require a substantial effort; thus, the request could not be accommodated in the Project schedule.

Also note, the presentation of the Affected Environment and the Environmental Consequences is consistent with the organization of the EISs for other similar large-scale, multi-state transmission projects recently prepared by the BLM (e.g., the Energy Gateway West transmission project EIS).

F2aj Preconstruction surveys will not be conducted prior to completion of the Final EIS for the Project. Preconstruction surveys will be conducted for the selected route to inform final Project design and engineering and mitigation planning in the construction POD. Requirements for preconstruction surveys are described in Section 2.5.1.2 and Table 2-8, Design Feature 3.

F2ak See next page for response to F2ak.

F2al See next page for response to F2al.

Comment(s)

Response(s) - continued

F2 **U.S. Fish and Wildlife Service (cont.)**

F2ak

(A) Water depletions have now been added as potential effect of the Project in Sections 3.2.4, 3.2.6, and 3.2.10 of the EIS.

(B) Discussions with the BLM and the Wyoming State Engineer have indicated that use of water from municipal sources would not be considered new depletions, as municipal use is already considered consumptive. Only changes in use from non-consumptive (e.g., agriculture) to consumptive use would be considered a new depletion. As specified in Appendix B of the Draft EIS, the Applicant would procure water required for construction from existing municipal or commercial sources or under temporary water use agreements with landowners holding existing water rights. Whether or not consultation under the ESA for these sources has already occurred will either be determined during the Section 7 consultation process, or if specific sources have not been identified prior to submittal of the final BA, potential water depletions to the Platte and Colorado Rivers will be calculated based on construction needs in these watersheds and depletion fees will be paid into the respective recovery programs, if and as appropriate.

(C) The first sentence in this paragraph referred to water quantity, while the last sentence referred to water quality. Text has been edited for clarification and to provide further information on water use of the project.

(D) Comment noted. The BLM is coordinating with the Wyoming State Engineer's Office and the Fish and Wildlife Service (FWS) regarding this issue through the Section 7 consultation process.

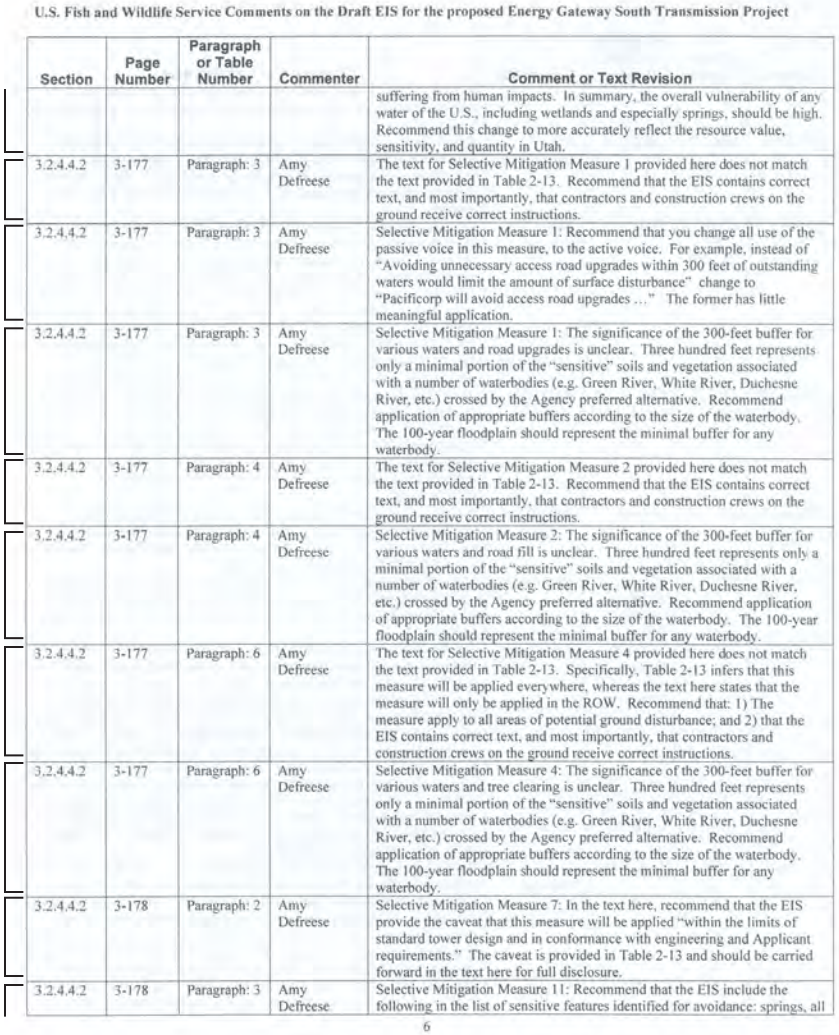
F2al

Comment noted. The BLM does not agree with the commenter's opinion that the vulnerability model for water resources is inadequate. The impact criteria and the methodology for assessing impacts on water resources, which takes into consideration water resource vulnerabilities, were developed in coordination with the Agency Interdisciplinary Team, including cooperating agencies.

Comment(s)

Response(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2al					suffering from human impacts. In summary, the overall vulnerability of any water of the U.S., including wetlands and especially springs, should be high. Recommend this change to more accurately reflect the resource value, sensitivity, and quantity in Utah.
F2am	3.2.4.4.2	3-177	Paragraph: 3	Amy Defreese	The text for Selective Mitigation Measure 1 provided here does not match the text provided in Table 2-13. Recommend that the EIS contains correct text, and most importantly, that contractors and construction crews on the ground receive correct instructions.
F2an	3.2.4.4.2	3-177	Paragraph: 3	Amy Defreese	Selective Mitigation Measure 1: Recommend that you change all use of the passive voice in this measure, to the active voice. For example, instead of "Avoiding unnecessary access road upgrades within 300 feet of outstanding waters would limit the amount of surface disturbance" change to "Pacificorp will avoid access road upgrades …" The former has little meaningful application.
F2ao	3.2.4.4.2	3-177	Paragraph: 3	Amy Defreese	Selective Mitigation Measure 1: The significance of the 300-feet buffer for various waters and road upgrades is unclear. Three hundred feet represents only a minimal portion of the "sensitive" soils and vegetation associated with a number of waterbodies (e.g. Green River, White River, Duchesne River, etc.) crossed by the Agency preferred alternative. Recommend application of appropriate buffers according to the size of the waterbody. The 100-year floodplain should represent the minimal buffer for any waterbody.
F2ap	3.2.4.4.2	3-177	Paragraph: 4	Amy Defreese	The text for Selective Mitigation Measure 2 provided here does not match the text provided in Table 2-13. Recommend that the EIS contains correct text, and most importantly, that contractors and construction crews on the ground receive correct instructions.
F2aq	3.2.4.4.2	3-177	Paragraph: 4	Amy Defreese	Selective Mitigation Measure 2: The significance of the 300-feet buffer for various waters and road fill is unclear. Three hundred feet represents only a minimal portion of the "sensitive" soils and vegetation associated with a number of waterbodies (e.g. Green River, White River, Duchesne River, etc.) crossed by the Agency preferred alternative. Recommend application of appropriate buffers according to the size of the waterbody. The 100-year floodplain should represent the minimal buffer for any waterbody.
F2ar	3.2.4.4.2	3-177	Paragraph: 6	Amy Defreese	The text for Selective Mitigation Measure 4 provided here does not match the text provided in Table 2-13. Specifically, Table 2-13 infers that this measure will be applied everywhere, whereas the text here states that the measure will only be applied in the ROW. Recommend that: 1) The measure apply to all areas of potential ground disturbance; and 2) that the EIS contains correct text, and most importantly, that contractors and construction crews on the ground receive correct instructions.
F2as	3.2.4.4.2	3-177	Paragraph: 6	Amy Defreese	Selective Mitigation Measure 4: The significance of the 300-feet buffer for various waters and tree clearing is unclear. Three hundred feet represents only a minimal portion of the "sensitive" soils and vegetation associated with a number of waterbodies (e.g. Green River, White River, Duchesne River, etc.) crossed by the Agency preferred alternative. Recommend application of appropriate buffers according to the size of the waterbody. The 100-year floodplain should represent the minimal buffer for any waterbody.
F2at	3.2.4.4.2	3-178	Paragraph: 2	Amy Defreese	Selective Mitigation Measure 7: In the text here, recommend that the EIS provide the caveat that this measure will be applied "within the limits of standard tower design and in conformance with engineering and Applicant requirements." The caveat is provided in Table 2-13 and should be carried forward in the text here for full disclosure.
F2au	3.2.4.4.2	3-178	Paragraph: 3	Amy Defreese	Selective Mitigation Measure 11: Recommend that the EIS include the following in the list of sensitive features identified for avoidance: springs, all

6

F2am	The text referenced in Section 3.2.4.4.2 is intended to describe how the selective mitigation measure (which is applicable to multiple resources) will be applied for water resources. BLM will refine specific application of selective mitigation measures in cooperation with cooperating agencies, including the Fish and Wildlife Service (FWS), and the Applicant during preparation of the POD. The process for application and agency review of selective mitigation measures applied during preparation of the POD is described in Section 2.4 of the Final EIS. As described in Section 2.5.1.2 and 3.2.8.4.1 under the heading Mitigation Planning and Effectiveness, the results of preconstruction surveys would be used by the agencies to refine the mitigation requirements and further inform the construction POD. All selective mitigation measures will be incorporated into the construction POD, which will clearly indicate where each selective mitigation measure would be applied, and will be provided to construction contractors.
F2an	Because the selective mitigation measures are presented and discussed throughout the EIS document, it would require a substantial effort to make such a revision and, thus, the request could not be accommodated in the Project schedule. It should be noted, however, that the passive language referred to in the comment is due to the sequence of impact analysis and mitigation planning, followed by development of the POD for the selected route, rather than conditionality of the selective mitigation measures. That is, the POD would be refined during detailed design and engineering once a route has been selected for construction of the project. Refinements must be either (1) consistent with the outcome of the impact assessment and mitigation planning disclosed in this EIS or (2) supplemental NEPA review would be required. The content of the POD, which will be carried forward from and/or refined from the information and data disclosed in the EIS, consists of (1) background information, direction, and implementation plans and (2) detailed mapping to facilitate execution of the design features of the Proposed Action for environmental protection and the selective mitigation measures committed to in the EIS.
F2ao	See next page for response to F2ao.
F2ap	See next page for response to F2ap.
F2aq	See next page for response to F2aq.
F2ar	See next page for response to F2ar.
F2as	See next page for response to F2as.
F2at	See next page for response to F2at.
F2au	See next page for response to F2au.

Comment(s)

Response(s) - continued

F2 **U.S. Fish and Wildlife Service (cont.)**

F2ao Floodplain mapping is not comprehensive for all jurisdictions along the alternative routes and route variations; therefore 100-year floodplains cannot be used consistently in an analysis as buffers for water resources throughout the Project area. All wetlands and waterways would be delineated for the selected route before construction, and any impacts on U.S. Army Corps of Engineers jurisdictional features would be subject to Section 404 of the CWA (refer to Section 3.2.4.1.1). Additionally, per Design Feature 33, surface-disturbing activities within 328 feet (100 meters) of riparian areas (including wetlands, stream banks, and shores of ponds or lakes) in Utah or Colorado would be required to meet exception criteria as defined by the BLM. This buffer distance was identified in coordination with the Agency Interdisciplinary Team and cooperating agency representatives and is consistent with Utah BLM Riparian Policy (BLM 2010). In Wyoming, surface-disturbing activities within 500 feet of all wetlands and waterways would also be required to meet exception criteria in association with the BLM Rawlins Field Office Resource Management Plan (BLM 2008).

Further, selective Mitigation Measure 1, the restriction of upgrading or widening access roads, would be applied selectively to all specially designated waters. A 328-foot avoidance buffer would be applied around these features in Colorado and Utah, and a 500-foot avoidance buffer would be applied in Wyoming,in addition to the stipulations required for all waters and wetlands under Design Feature 33 and the CWA.

F2ap The text referenced in Section 3.2.4.4.2 is intended to describe how the selective mitigation measure (which is applicable to multiple resources) will be applied for water resources. BLM will refine specific application of selective mitigation measures in cooperation with cooperating agencies, including the FWS, and the Applicant during preparation of the POD. The process for application and agency review of selective mitigation measures applied during preparation of the POD is described in Section 2.4 of the Final EIS. As described in Section 2.5.1.2 and 3.2.8.4.1 under the heading Mitigation Planning and Effectiveness, the results of preconstruction surveys would be used by the agencies to refine the mitigation requirements and further inform the construction POD.

All selective mitigation measures will be incorporated into the construction POD, which will clearly indicate where each selective mitigation measure would be applied, and will be provided to construction contractors.

F2aq See response to Comment F2ao.

Comment(s)

Response(s) - continued

F2 **U.S. Fish and Wildlife Service (cont.)**

F2ar Mitigation Measure 4 would be applied in the right-of-way as indicated in Table 2-13. All mitigation measures will be incorporated into the Project POD, which will clearly indicate where each selective mitigation measure would be applied, and will be provided to construction contractors.

Selective Mitigation Measure 4, as it was applied to water resources, was found to be redundant with the intent of implementation of Selective Mitigation Measure 11 and has been removed from application to water resources.

F2as See response to Comment F2ao.

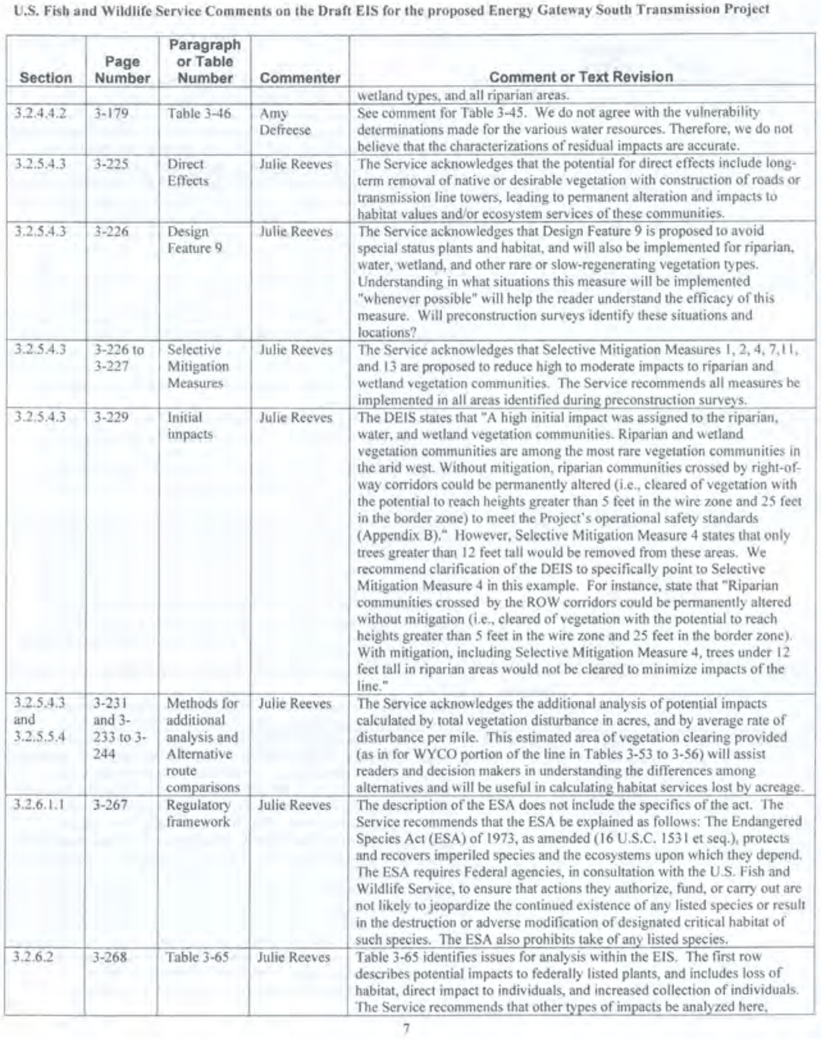
F2at Text has been edited to reflect the language in Table 2-13 for Selective Mitigation Measure 7.

F2au The BLM believes potential impacts on these sensitive features are adequately addressed by Selective Mitigation Measure 2.

Comment(s)

F2

U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2au					wetland types, and all riparian areas.
F2av	3.2.4.4.2	3-179	Table 3-46	Amy Defreese	See comment for Table 3-45. We do not agree with the vulnerability determinations made for the various water resources. Therefore, we do not believe that the characterizations of residual impacts are accurate.
	3.2.5.4.3	3-225	Direct Effects	Julie Reeves	The Service acknowledges that the potential for direct effects include long-term removal of native or desirable vegetation with construction of roads or transmission line towers, leading to permanent alteration and impacts to habitat values and/or ecosystem services of these communities.
F2aw	3.2.5.4.3	3-226	Design Feature 9	Julie Reeves	The Service acknowledges that Design Feature 9 is proposed to avoid special status plants and habitat, and will also be implemented for riparian, water, wetland, and other rare or slow-regenerating vegetation types. Understanding in what situations this measure will be implemented "whenever possible" will help the reader understand the efficacy of this measure. Will preconstruction surveys identify these situations and locations?
F2ax	3.2.5.4.3	3-226 to 3-227	Selective Mitigation Measures	Julie Reeves	The Service acknowledges that Selective Mitigation Measures 1, 2, 4, 7,11, and 13 are proposed to reduce high to moderate impacts to riparian and wetland vegetation communities. The Service recommends all measures be implemented in all areas identified during preconstruction surveys.
F2ay	3.2.5.4.3	3-229	Initial impacts	Julie Reeves	The DEIS states that "A high initial impact was assigned to the riparian, water, and wetland vegetation communities. Riparian and wetland vegetation communities are among the most rare vegetation communities in the arid west. Without mitigation, riparian communities crossed by right-of-way corridors could be permanently altered (i.e., cleared of vegetation with the potential to reach heights greater than 5 feet in the wire zone and 25 feet in the border zone) to meet the Project's operational safety standards (Appendix B)." However, Selective Mitigation Measure 4 states that only trees greater than 12 feet tall would be removed from these areas. We recommend clarification of the DEIS to specifically point to Selective Mitigation Measure 4 in this example. For instance, state that "Riparian communities crossed by the ROW corridors could be permanently altered without mitigation (i.e., cleared of vegetation with the potential to reach heights greater than 5 feet in the wire zone and 25 feet in the border zone). With mitigation, including Selective Mitigation Measure 4, trees under 12 feet tall in riparian areas would not be cleared to minimize impacts of the line."
	3.2.5.4.3 and 3.2.5.5.4	3-231 and 3-233 to 3-244	Methods for additional analysis and Alternative route comparisons	Julie Reeves	The Service acknowledges the additional analysis of potential impacts calculated by total vegetation disturbance in acres, and by average rate of disturbance per mile. This estimated area of vegetation clearing provided (as in for WYCO portion of the line in Tables 3-53 to 3-56) will assist readers and decision makers in understanding the differences among alternatives and will be useful in calculating habitat services lost by acreage.
F2az	3.2.6.1.1	3-267	Regulatory framework	Julie Reeves	The description of the ESA does not include the specifics of the act. The Service recommends that the ESA be explained as follows: The Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), protects and recovers imperiled species and the ecosystems upon which they depend. The ESA requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The ESA also prohibits take of any listed species.
F2ba	3.2.6.2	3-268	Table 3-65	Julie Reeves	Table 3-65 identifies issues for analysis within the EIS. The first row describes potential impacts to federally listed plants, and includes loss of habitat, direct impact to individuals, and increased collection of individuals. The Service recommends that other types of impacts be analyzed here,

7

Response(s)

F2av Comment noted. The BLM does not agree with the commenter's opinion that the vulnerability model used to assess residual impacts on water resources is inadequate and, therefore, that the results are flawed. The impact criteria and the methodology for assessing impacts on water resources were developed in coordination with the Agency Interdisciplinary Team, including cooperating agencies.

F2aw See the response to Comment F2bn for an understanding of how conditional language of selective mitigation measures relates to the sequence of impact analysis and mitigation planning and development of the POD for the selected route.

In the case of some resources (e.g., biological, cultural, and paleontological resources), post-EIS pedestrian surveys using agency-approved protocols would be required, the results of which would help refine the mitigation requirements and inform the POD.

F2ax The BLM intends that all selective mitigation measures will be implemented in all riparian and wetland vegetation communities identified during preconstruction surveys and documented in the construction POD.

F2ay Selective Mitigation Measure 4, as described in Table 2-13, states that only trees greater than 5 feet tall would be cleared in riparian habitats for initial transmission line construction and during maintenance. In contrast, the standard practice in other vegetation communities would be to clear all vegetation with the potential to reach heights of 5 feet or greater. The description of Selective Mitigation Measure 4 in the vegetation section of Chapter 3 incorrectly stated that only vegetation greater than 12 feet tall would be cleared in riparian habitats; this has been corrected.

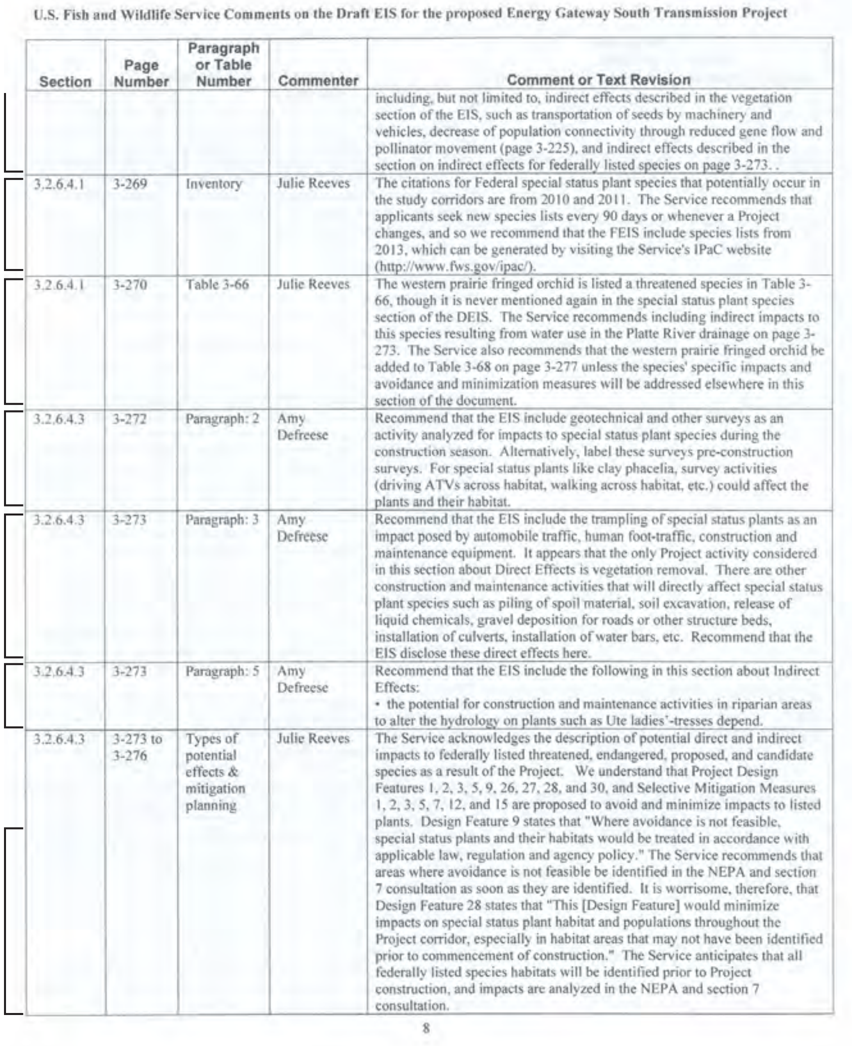
As the paragraph referenced in this comment is describing potential impacts on resources prior to implementation of selective mitigation measures, it would not be appropriate to modify the paragraph to include a description of Selective Mitigation Measure 4. However, greater specificity has been added to the paragraph describing impacts on riparian, water, and wetland vegetation communities to reiterate how selective mitigation measures were applied to reduce high initial impacts on these areas.

F2az Text has been modified as recommended.

F2ba Bulleted lists in Table 3-65 have been edited to include all direct and indirect effects identified in the analysis of impacts on special status plant species.

Comment(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2ba					including, but not limited to, indirect effects described in the vegetation section of the EIS, such as transportation of seeds by machinery and vehicles, decrease of population connectivity through reduced gene flow and pollinator movement (page 3-225), and indirect effects described in the section on indirect effects for federally listed species on page 3-273. .
F2bb	3.2.6.4.1	3-269	Inventory	Julie Reeves	The citations for Federal special status plant species that potentially occur in the study corridors are from 2010 and 2011. The Service recommends that applicants seek new species lists every 90 days or whenever a Project changes, and so we recommend that the FEIS include species lists from 2013, which can be generated by visiting the Service's IPaC website (http://www.fws.gov/ipac/).
F2bc	3.2.6.4.1	3-270	Table 3-66	Julie Reeves	The western prairie fringed orchid is listed a threatened species in Table 3-66, though it is never mentioned again in the special status plant species section of the DEIS. The Service recommends including indirect impacts to this species resulting from water use in the Platte River drainage on page 3-273. The Service also recommends that the western prairie fringed orchid be added to Table 3-68 on page 3-277 unless the species' specific impacts and avoidance and minimization measures will be addressed elsewhere in this section of the document.
F2bd	3.2.6.4.3	3-272	Paragraph: 2	Amy Defreese	Recommend that the EIS include geotechnical and other surveys as an activity analyzed for impacts to special status plant species during the construction season. Alternatively, label these surveys pre-construction surveys. For special status plants like clay phacelia, survey activities (driving ATVs across habitat, walking across habitat, etc.) could affect the plants and their habitat.
F2be	3.2.6.4.3	3-273	Paragraph: 3	Amy Defreese	Recommend that the EIS include the trampling of special status plants as an impact posed by automobile traffic, human foot-traffic, construction and maintenance equipment. It appears that the only Project activity considered in this section about Direct Effects is vegetation removal. There are other construction and maintenance activities that will directly affect special status plant species such as piling of spoil material, soil excavation, release of liquid chemicals, gravel deposition for roads or other structure beds, installation of culverts, installation of water bars, etc. Recommend that the EIS disclose these direct effects here.
F2bf	3.2.6.4.3	3-273	Paragraph: 5	Amy Defreese	Recommend that the EIS include the following in this section about Indirect Effects: • the potential for construction and maintenance activities in riparian areas to alter the hydrology on plants such as Ute ladies'-tresses depend.
F2bg	3.2.6.4.3	3-273 to 3-276	Types of potential effects & mitigation planning	Julie Reeves	The Service acknowledges the description of potential direct and indirect impacts to federally listed threatened, endangered, proposed, and candidate species as a result of the Project. We understand that Project Design Features 1, 2, 3, 5, 9, 26, 27, 28, and 30, and Selective Mitigation Measures 1, 2, 3, 5, 7, 12, and 15 are proposed to avoid and minimize impacts to listed plants. Design Feature 9 states that "Where avoidance is not feasible, special status plants and their habitats would be treated in accordance with applicable law, regulation and agency policy." The Service recommends that areas where avoidance is not feasible be identified in the NEPA and section 7 consultation as soon as they are identified. It is worrisome, therefore, that Design Feature 28 states that "This [Design Feature] would minimize impacts on special status plant habitat and populations throughout the Project corridor, especially in habitat areas that may not have been identified prior to commencement of construction." The Service anticipates that all federally listed species habitats will be identified prior to Project construction, and impacts are analyzed in the NEPA and section 7 consultation.

8

Response(s)

F2bb

Species lists have been updated using the IPaC database website.

F2bc

Potential indirect impacts on this species resulting from water depletions have been included in the text as specified. A subsection has been added to explain how potential impacts on western prairie fringed orchid from water depletions will be assessed through Section 7 consultation. This information has also been added to the relevant section in Appendix J.

As the Project does not directly cross habitat for this species, selective mitigation measures cannot be assigned to minimize initial impacts on this species. Additionally, no design feature of the Proposed Action for environmental protection or selective mitigation measure specifically addresses water depletion effects on downstream systems. Therefore, this species is not included in Table 3-68.

F2bd

Overland vehicle access for geotechnical surveys and foot traffic for preconstruction special status species surveys have been added as actions that could potentially impact special status plants and habitat. Additional coordination with the FWS will occur for ESA-listed plant species during the Section 7 consultation.

F2be

Discussion of direct impacts has been revised to describe in greater detail the types of actions that would be involved in Project construction activities. Additional coordination with the FWS will occur for ESA-listed plant species during the Section 7 consultation.

F2bf

This type of potential indirect impact has been included in the effects analysis as recommended. Additional coordination with the FWS will occur for ESA-listed plant species during the Section 7 consultation.

F2bg

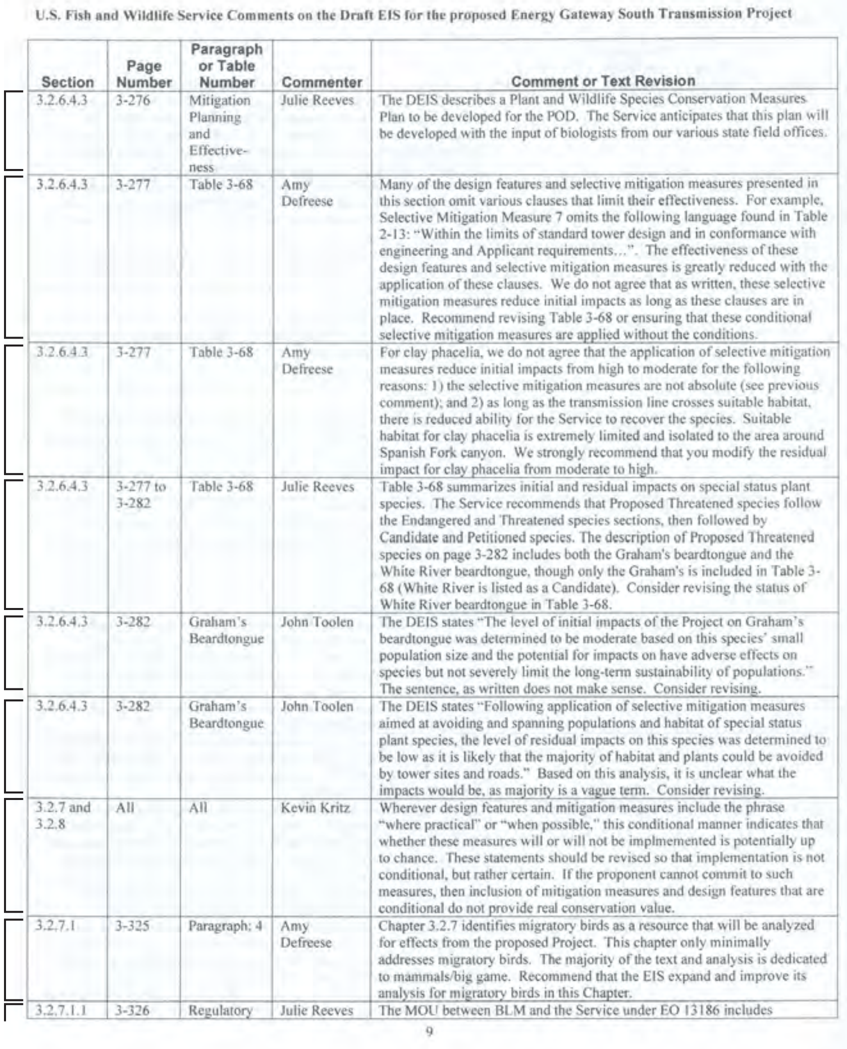
(A) See response to Comment F2bn for an understanding of how conditional language of selective mitigation measures relates to the sequence of impact analysis and mitigation planning and development of the POD for the selected route.

(B) The referenced text was incorrect and has been edited. Preconstruction surveys will occur in habitat for federally listed species identified by the agencies. It is assumed that all potential habitat will be adequately identified prior to surveys.

(C) Analysis of impacts on special status plants and habitat in the EIS and BA will be based on currently available habitat and population data. As the EIS and BA will be published prior to the RODs and any preconstruction species surveys, reinitiation of the Section 7 process would occur if impacts on species are anticipated beyond what was analyzed in the BA and the FWS-issued Biological Opinion.

Comment(s)

F2 U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2bh	3.2.6.4.3	3-276	Mitigation Planning and Effectiveness	Julie Reeves	The DEIS describes a Plant and Wildlife Species Conservation Measures Plan to be developed for the POD. The Service anticipates that this plan will be developed with the input of biologists from our various state field offices.
F2bi	3.2.6.4.3	3-277	Table 3-68	Amy Defreese	Many of the design features and selective mitigation measures presented in this section omit various clauses that limit their effectiveness. For example, Selective Mitigation Measure 7 omits the following language found in Table 2-13: "Within the limits of standard tower design and in conformance with engineering and Applicant requirements…". The effectiveness of these design features and selective mitigation measures is greatly reduced with the application of these clauses. We do not agree that as written, these selective mitigation measures reduce initial impacts as long as these clauses are in place. Recommend revising Table 3-68 or ensuring that these conditional selective mitigation measures are applied without the conditions.
F2bj	3.2.6.4.3	3-277	Table 3-68	Amy Defreese	For clay phacelia, we do not agree that the application of selective mitigation measures reduce initial impacts from high to moderate for the following reasons: 1) the selective mitigation measures are not absolute (see previous comment); and 2) as long as the transmission line crosses suitable habitat, there is reduced ability for the Service to recover the species. Suitable habitat for clay phacelia is extremely limited and isolated to the area around Spanish Fork canyon. We strongly recommend that you modify the residual impact for clay phacelia from moderate to high.
F2bk	3.2.6.4.3	3-277 to 3-282	Table 3-68	Julie Reeves	Table 3-68 summarizes initial and residual impacts on special status plant species. The Service recommends that Proposed Threatened species follow the Endangered and Threatened species sections, then followed by Candidate and Petitioned species. The description of Proposed Threatened species on page 3-282 includes both the Graham's beardtongue and the White River beardtongue, though only the Graham's is included in Table 3-68 (White River is listed as a Candidate). Consider revising the status of White River beardtongue in Table 3-68.
F2bl	3.2.6.4.3	3-282	Graham's Beardtongue	John Toolen	The DEIS states "The level of initial impacts of the Project on Graham's beardtongue was determined to be moderate based on this species' small population size and the potential for impacts on have adverse effects on species but not severely limit the long-term sustainability of populations." The sentence, as written does not make sense. Consider revising.
F2bm	3.2.6.4.3	3-282	Graham's Beardtongue	John Toolen	The DEIS states "Following application of selective mitigation measures aimed at avoiding and spanning populations and habitat of special status plant species, the level of residual impacts on this species was determined to be low as it is likely that the majority of habitat and plants could be avoided by tower sites and roads." Based on this analysis, it is unclear what the impacts would be, as majority is a vague term. Consider revising.
F2bn	3.2.7 and 3.2.8	All	All	Kevin Kritz	Wherever design features and mitigation measures include the phrase "where practical" or "when possible," this conditional manner indicates that whether these measures will or will not be implmemented is potentially up to chance. These statements should be revised so that implementation is not conditional, but rather certain. If the proponent cannot commit to such measures, then inclusion of mitigation measures and design features that are conditional do not provide real conservation value.
F2bo	3.2.7.1	3-325	Paragraph: 4	Amy Defreese	Chapter 3.2.7 identifies migratory birds as a resource that will be analyzed for effects from the proposed Project. This chapter only minimally addresses migratory birds. The majority of the text and analysis is dedicated to mammals/big game. Recommend that the EIS expand and improve its analysis for migratory birds in this Chapter.
F2bp	3.2.7.1.1	3-326	Regulatory	Julie Reeves	The MOU between BLM and the Service under EO 13186 includes

9

Response(s)

F2bh If the Project is approved, the POD, including the Plant and Wildlife Species Conservation Measures Plan, would be developed for the selected route in coordination with cooperating agencies, including the FWS.

F2bi (A) Text for Selective Mitigation Measure 7 has been edited to reflect language in Table 2-13.

(B) See response to Comment F2bn for an understanding of how conditional language of selective mitigation measures relates to the sequence of impact analysis and mitigation planning and development of the POD for the selected route.

F2bj Comment noted. Impact criteria were developed in coordination with the Agency Interdisciplinary Team, including FWS representatives. Additional coordination with the FWS will occur for this species during Section 7 consultation.

F2bk The FWS proposal to list these species as threatened under the ESA and to designate critical habitat was withdrawn on August 6, 2014. Analysis of impacts on these species has been retained in the document as presented in the Draft EIS as these species now are indicated as being BLM sensitive species.

F2bl Text edited for clarity and to correct typographical error.

F2bm Text has been edited to clarify how residual impact levels were assigned.

F2bn See next page for response to F2bn.

F2bo See next page for response to F2bo.

Comment(s)

Response(s) - continued

F2 **U.S. Fish and Wildlife Service (cont.)**

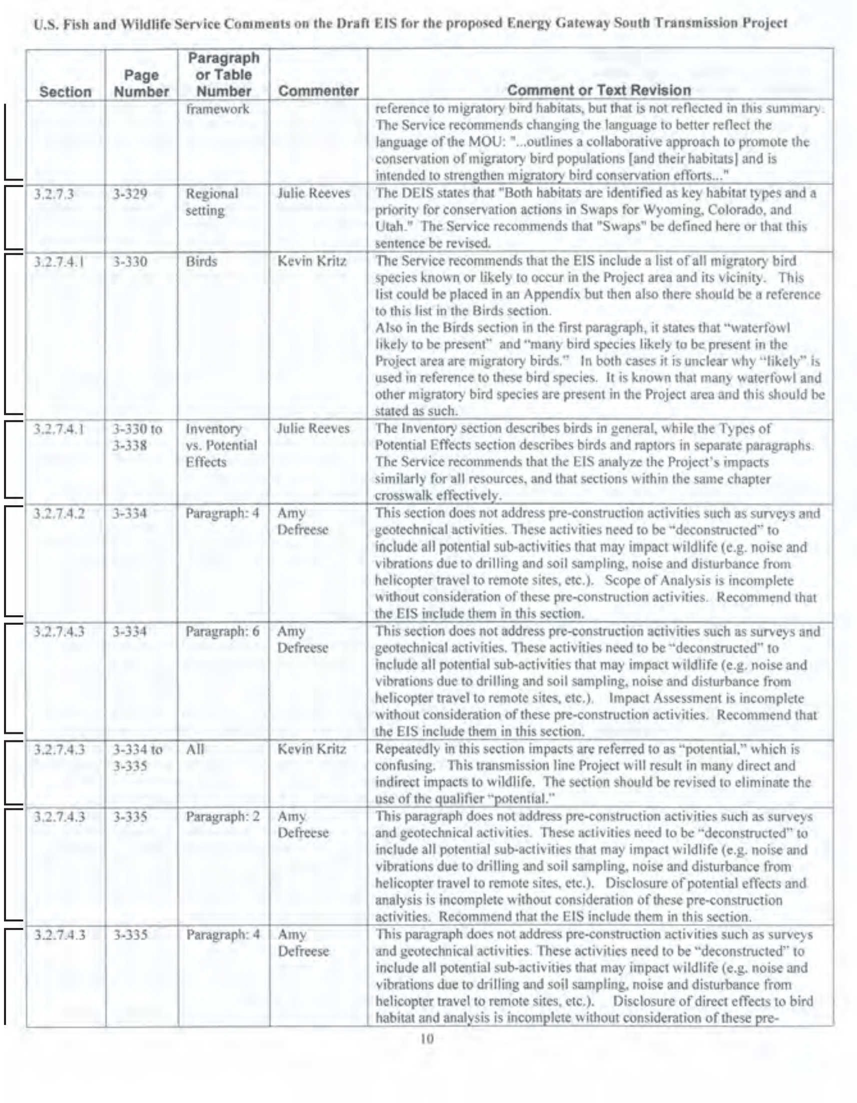
F2bn Refer to Section 2.4 of the document. The conditional language referred to in the comment is relative to the sequence of impact analysis and mitigation planning, followed by development of the POD for the selected route. That is, the POD would be refined during detailed design and engineering once a route has been selected for construction of the Project. Refinements must be either (1) consistent with the outcome of the impact assessment and mitigation planning disclosed in this EIS, or (2) supplemental NEPA review would be required. The content of the POD, which is carried forward from and/or refined from the information and data disclosed in the EIS, consists of (1) background information, direction, and implementation plans and (2) detailed mapping to facilitate execution of environmental protection measures. Background information and direction includes the Project description, including an explanation of Applicant's and agencies' roles and responsibilities; description of construction, operation, and maintenance activities; specification of land use and access; and description of design features and other measures for environmental protection to avoid sensitive environmental resources. In the case of some resources (e.g., biological, cultural, and paleontological resources), post-EIS, pedestrian, agency-approved surveys would be required, the results of which would help refine the mitigation requirements and inform the POD.

F2bo The BLM, FWS, and the Applicant are engaged in ongoing discussions regarding the analysis of potential effects on migratory birds. The analysis for migratory birds was revised and expanded for the Final EIS and reflects these discussions. The revised analysis is presented in Section 3.2.9.

Comment(s)

Response(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

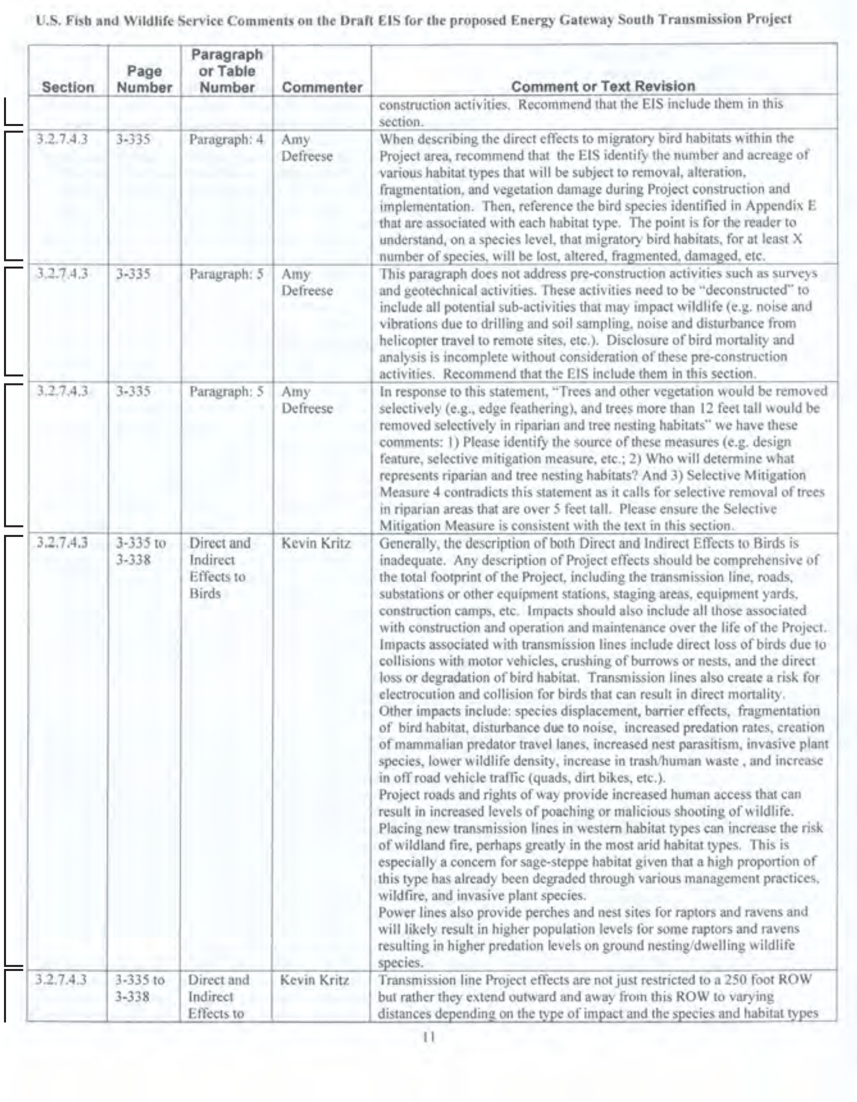
	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2bp			framework		reference to migratory bird habitats, but that is not reflected in this summary. The Service recommends changing the language to better reflect the language of the MOU: "...outlines a collaborative approach to promote the conservation of migratory bird populations [and their habitats] and is intended to strengthen migratory bird conservation efforts..."
F2bq	3.2.7.3	3-329	Regional setting	Julie Reeves	The DEIS states that "Both habitats are identified as key habitat types and a priority for conservation actions in Swaps for Wyoming, Colorado, and Utah." The Service recommends that "Swaps" be defined here or that this sentence be revised.
F2br	3.2.7.4.1	3-330	Birds	Kevin Kritz	The Service recommends that the EIS include a list of all migratory bird species known or likely to occur in the Project area and its vicinity. This list could be placed in an Appendix but then also there should be a reference to this list in the Birds section. Also in the Birds section in the first paragraph, it states that "waterfowl likely to be present" and "many bird species likely to be present in the Project area are migratory birds." In both cases it is unclear why "likely" is used in reference to these bird species. It is known that many waterfowl and other migratory bird species are present in the Project area and this should be stated as such.
F2bs	3.2.7.4.1	3-330 to 3-338	Inventory vs. Potential Effects	Julie Reeves	The Inventory section describes birds in general, while the Types of Potential Effects section describes birds and raptors in separate paragraphs. The Service recommends that the EIS analyze the Project's impacts similarly for all resources, and that sections within the same chapter crosswalk effectively.
F2bt	3.2.7.4.2	3-334	Paragraph: 4	Amy Defreese	This section does not address pre-construction activities such as surveys and geotechnical activities. These activities need to be "deconstructed" to include all potential sub-activities that may impact wildlife (e.g. noise and vibrations due to drilling and soil sampling, noise and disturbance from helicopter travel to remote sites, etc.). Scope of Analysis is incomplete without consideration of these pre-construction activities. Recommend that the EIS include them in this section.
F2bu	3.2.7.4.3	3-334	Paragraph: 6	Amy Defreese	This section does not address pre-construction activities such as surveys and geotechnical activities. These activities need to be "deconstructed" to include all potential sub-activities that may impact wildlife (e.g. noise and vibrations due to drilling and soil sampling, noise and disturbance from helicopter travel to remote sites, etc.). Impact Assessment is incomplete without consideration of these pre-construction activities. Recommend that the EIS include them in this section.
F2bv	3.2.7.4.3	3-334 to 3-335	All	Kevin Kritz	Repeatedly in this section impacts are referred to as "potential," which is confusing. This transmission line Project will result in many direct and indirect impacts to wildlife. The section should be revised to eliminate the use of the qualifier "potential."
F2bw	3.2.7.4.3	3-335	Paragraph: 2	Amy Defreese	This paragraph does not address pre-construction activities such as surveys and geotechnical activities. These activities need to be "deconstructed" to include all potential sub-activities that may impact wildlife (e.g. noise and vibrations due to drilling and soil sampling, noise and disturbance from helicopter travel to remote sites, etc.). Disclosure of potential effects and analysis is incomplete without consideration of these pre-construction activities. Recommend that the EIS include them in this section.
F2bx	3.2.7.4.3	3-335	Paragraph: 4	Amy Defreese	This paragraph does not address pre-construction activities such as surveys and geotechnical activities. These activities need to be "deconstructed" to include all potential sub-activities that may impact wildlife (e.g. noise and vibrations due to drilling and soil sampling, noise and disturbance from helicopter travel to remote sites, etc.). Disclosure of direct effects to bird habitat and analysis is incomplete without consideration of these pre-

10

F2bp	Text has been edited as requested.
F2bq	SWAPs are defined in Section 3.2.7.1.1 and in the List of Acronyms and Abbreviations.
F2br	A list of migratory birds known or likely to occur in the Project area is included in Appendix J, Table J-6. The analysis of potential effects on migratory birds has been revised and is included in Section 3.2.9 of the Final EIS.
F2bs	In this case, the types of potential effects are different in many aspects and thus warrant separate sections.
F2bt	Surveys and geotechnical activities are considered a subset of all construction activities as described in Section 3.2 of Appendix B. Surveys and geotechnical activities are considered jointly with all other construction activities in the analysis of potential effects analyzed in the Draft EIS because they spatially (i.e., they occur within the same footprint) and temporally overlap with other construction activities (refer to Table 8a and 8b in Appendix B for the Project Duration Schedule). For example, the BLM understands the Applicant considers the geotechnical investigation as the first step of Project construction. Text in the Final EIS has been edited for clarity.
F2bu	See response to Comment F2bt.
F2bv	The purpose of the EIS is to evaluate and disclose the potential Project-related environmental impacts that could result from implementation of the Proposed Action and alternatives of the Proposed Action. While impacts resulting from the Proposed Action can be anticipated using the best available information, actual impacts cannot be known for certain.
F2bw	See response to Comment F2bt.
F2bx	See response to Comment F2bt.

Comment(s)

F2 U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2bx					construction activities. Recommend that the EIS include them in this section.
F2by	3.2.7.4.3	3-335	Paragraph: 4	Amy Defreese	When describing the direct effects to migratory bird habitats within the Project area, recommend that the EIS identify the number and acreage of various habitat types that will be subject to removal, alteration, fragmentation, and vegetation damage during Project construction and implementation. Then, reference the bird species identified in Appendix E that are associated with each habitat type. The point is for the reader to understand, on a species level, that migratory bird habitats, for at least X number of species, will be lost, altered, fragmented, damaged, etc.
F2bz	3.2.7.4.3	3-335	Paragraph: 5	Amy Defreese	This paragraph does not address pre-construction activities such as surveys and geotechnical activities. These activities need to be "deconstructed" to include all potential sub-activities that may impact wildlife (e.g. noise and vibrations due to drilling and soil sampling, noise and disturbance from helicopter travel to remote sites, etc.). Disclosure of bird mortality and analysis is incomplete without consideration of these pre-construction activities. Recommend that the EIS include them in this section.
F2ca	3.2.7.4.3	3-335	Paragraph: 5	Amy Defreese	In response to this statement, "Trees and other vegetation would be removed selectively (e.g., edge feathering), and trees more than 12 feet tall would be removed selectively in riparian and tree nesting habitats" we have these comments: 1) Please identify the source of these measures (e.g. design feature, selective mitigation measure, etc.; 2) Who will determine what represents riparian and tree nesting habitats? And 3) Selective Mitigation Measure 4 contradicts this statement as it calls for selective removal of trees in riparian areas that are over 5 feet tall. Please ensure the Selective Mitigation Measure is consistent with the text in this section.
F2cb	3.2.7.4.3	3-335 to 3-338	Direct and Indirect Effects to Birds	Kevin Kritz	Generally, the description of both Direct and Indirect Effects to Birds is inadequate. Any description of Project effects should be comprehensive of the total footprint of the Project, including the transmission line, roads, substations or other equipment stations, staging areas, equipment yards, construction camps, etc. Impacts should also include all those associated with construction and operation and maintenance over the life of the Project. Impacts associated with transmission lines include direct loss of birds due to collisions with motor vehicles, crushing of burrows or nests, and the direct loss or degradation of bird habitat. Transmission lines also create a risk for electrocution and collision for birds that can result in direct mortality. Other impacts include: species displacement, barrier effects, fragmentation of bird habitat, disturbance due to noise, increased predation rates, creation of mammalian predator travel lanes, increased nest parasitism, invasive plant species, lower wildlife density, increase in trash/human waste , and increase in off road vehicle traffic (quads, dirt bikes, etc.). Project roads and rights of way provide increased human access that can result in increased levels of poaching or malicious shooting of wildlife. Placing new transmission lines in western habitat types can increase the risk of wildland fire, perhaps greatly in the most arid habitat types. This is especially a concern for sage-steppe habitat given that a high proportion of this type has already been degraded through various management practices, wildfire, and invasive plant species. Power lines also provide perches and nest sites for raptors and ravens and will likely result in higher population levels for some raptors and ravens resulting in higher predation levels on ground nesting/dwelling wildlife species.
F2cc	3.2.7.4.3	3-335 to 3-338	Direct and Indirect Effects to	Kevin Kritz	Transmission line Project effects are not just restricted to a 250 foot ROW but rather they extend outward and away from this ROW to varying distances depending on the type of impact and the species and habitat types

11

Response(s)

F2by The analysis of potential effects on migratory birds has been revised and is included in Section 3.2.9 of the Final EIS.

F2bz See response to Comment F2bt.

F2ca Text has been edited for clarity. The process for application and agency review of selective mitigation measures applied during preparation of the POD is described in Section 2.4 of the Final EIS.

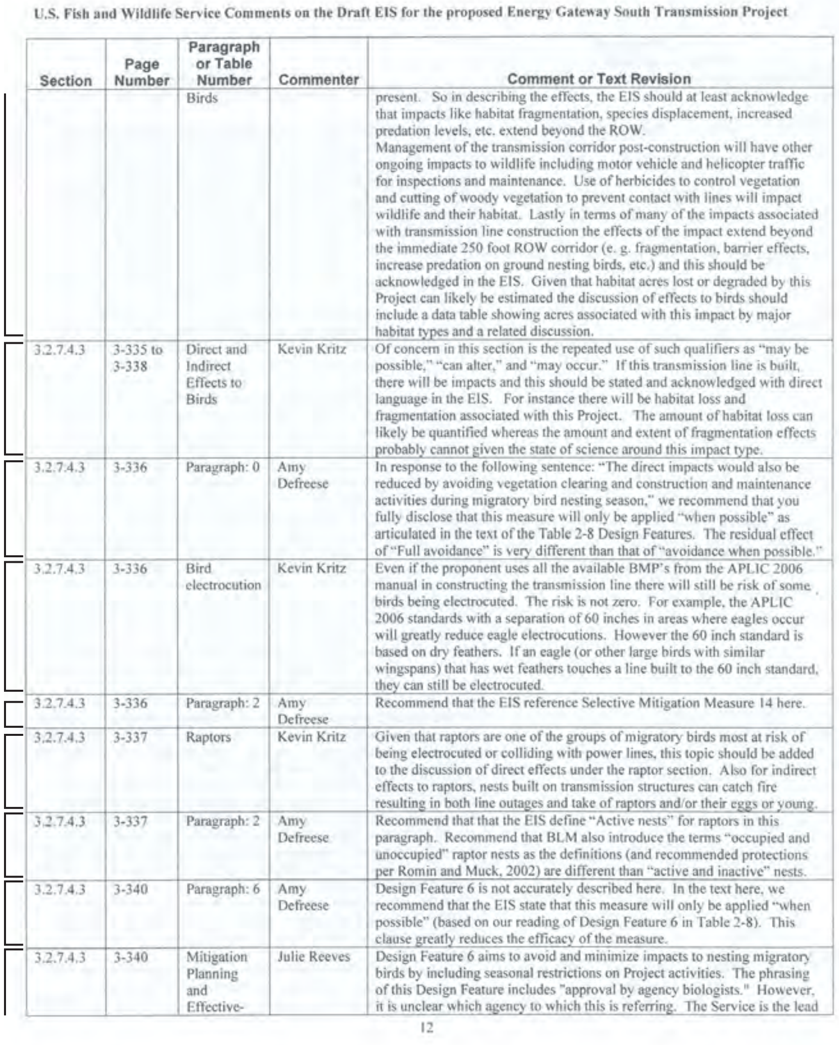
F2cb See response to Comment F2bo.

F2cc Indirect effects on wildlife, including effects that extend outside of the potential rights-of-way are identified and discussed in Section 3.2.7.4.3. As described in the beginning of Section 3.2.7.4.2, the geographic scope of analysis for wildlife resources was the 2-mile-wide study corridor (i.e., 1 mile on either side of the reference centerline) for each route, and was not limited to the 250-foot potential right-of-way.

The analysis for migratory birds was expanded for the Final EIS, and is presented in Section 3.2.9.

Comment(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2cc			Birds		present. So in describing the effects, the EIS should at least acknowledge that impacts like habitat fragmentation, species displacement, increased predation levels, etc. extend beyond the ROW. Management of the transmission corridor post-construction will have other ongoing impacts to wildlife including motor vehicle and helicopter traffic for inspections and maintenance. Use of herbicides to control vegetation and cutting of woody vegetation to prevent contact with lines will impact wildlife and their habitat. Lastly in terms of many of the impacts associated with transmission line construction the effects of the impact extend beyond the immediate 250 foot ROW corridor (e. g. fragmentation, barrier effects, increase predation on ground nesting birds, etc.) and this should be acknowledged in the EIS. Given that habitat acres lost or degraded by this Project can likely be estimated the discussion of effects to birds should include a data table showing acres associated with this impact by major habitat types and a related discussion.
F2cd	3.2.7.4.3	3-335 to 3-338	Direct and Indirect Effects to Birds	Kevin Kritz	Of concern in this section is the repeated use of such qualifiers as "may be possible," "can alter," and "may occur." If this transmission line is built, there will be impacts and this should be stated and acknowledged with direct language in the EIS. For instance there will be habitat loss and fragmentation associated with this Project. The amount of habitat loss can likely be quantified whereas the amount and extent of fragmentation effects probably cannot given the state of science around this impact type.
F2ce	3.2.7.4.3	3-336	Paragraph: 0	Amy Defreese	In response to the following sentence: "The direct impacts would also be reduced by avoiding vegetation clearing and construction and maintenance activities during migratory bird nesting season," we recommend that you fully disclose that this measure will only be applied "when possible" as articulated in the text of the Table 2-8 Design Features. The residual effect of "Full avoidance" is very different than that of "avoidance when possible."
F2cf	3.2.7.4.3	3-336	Bird electrocution	Kevin Kritz	Even if the proponent uses all the available BMP's from the APLIC 2006 manual in constructing the transmission line there will still be risk of some birds being electrocuted. The risk is not zero. For example, the APLIC 2006 standards with a separation of 60 inches in areas where eagles occur will greatly reduce eagle electrocutions. However the 60 inch standard is based on dry feathers. If an eagle (or other large birds with similar wingspans) that has wet feathers touches a line built to the 60 inch standard, they can still be electrocuted.
F2cg	3.2.7.4.3	3-336	Paragraph: 2	Amy Defreese	Recommend that the EIS reference Selective Mitigation Measure 14 here.
F2ch	3.2.7.4.3	3-337	Raptors	Kevin Kritz	Given that raptors are one of the groups of migratory birds most at risk of being electrocuted or colliding with power lines, this topic should be added to the discussion of direct effects under the raptor section. Also for indirect effects to raptors, nests built on transmission structures can catch fire resulting in both line outages and take of raptors and/or their eggs or young.
F2ci	3.2.7.4.3	3-337	Paragraph: 2	Amy Defreese	Recommend that that the EIS define "Active nests" for raptors in this paragraph. Recommend that BLM also introduce the terms "occupied and unoccupied" raptor nests as the definitions (and recommended protections per Romin and Muck, 2002) are different than "active and inactive" nests.
F2cj	3.2.7.4.3	3-340	Paragraph: 6	Amy Defreese	Design Feature 6 is not accurately described here. In the text here, we recommend that the EIS state that this measure will only be applied "when possible" (based on our reading of Design Feature 6 in Table 2-8). This clause greatly reduces the efficacy of the measure.
F2ck	3.2.7.4.3	3-340	Mitigation Planning and Effective-	Julie Reeves	Design Feature 6 aims to avoid and minimize impacts to nesting migratory birds by including seasonal restrictions on Project activities. The phrasing of this Design Feature includes "approval by agency biologists." However, it is unclear which agency to which this is referring. The Service is the lead

12

Response(s)

F2cd See response to Comment F2bv.

F2ce The recommended modification is reflected in the Final EIS.

F2cf The BLM acknowledges that bird electrocution is possible and risk increases when a bird's feathers are wet. However, as depicted in Appendix B of the Final EIS, the two lower phases of conductors of the 500-kilovolt (kV) transmission line are 55.5 feet apart. The 500kV H-frame conductors for all three phases of conductors are 37 feet apart. Typically, issues with bird electrocution occur on lines smaller than 69kV.

F2cg The application of Selective Mitigation Measures 6 and 14 have been reconsidered in the impact assessment and mitigation planning process based on comments received and discussion with the FWS. Text has been edited to reflect this change.

F2ch Discussion of potential risk of collision and electrocution of raptors has been revised.

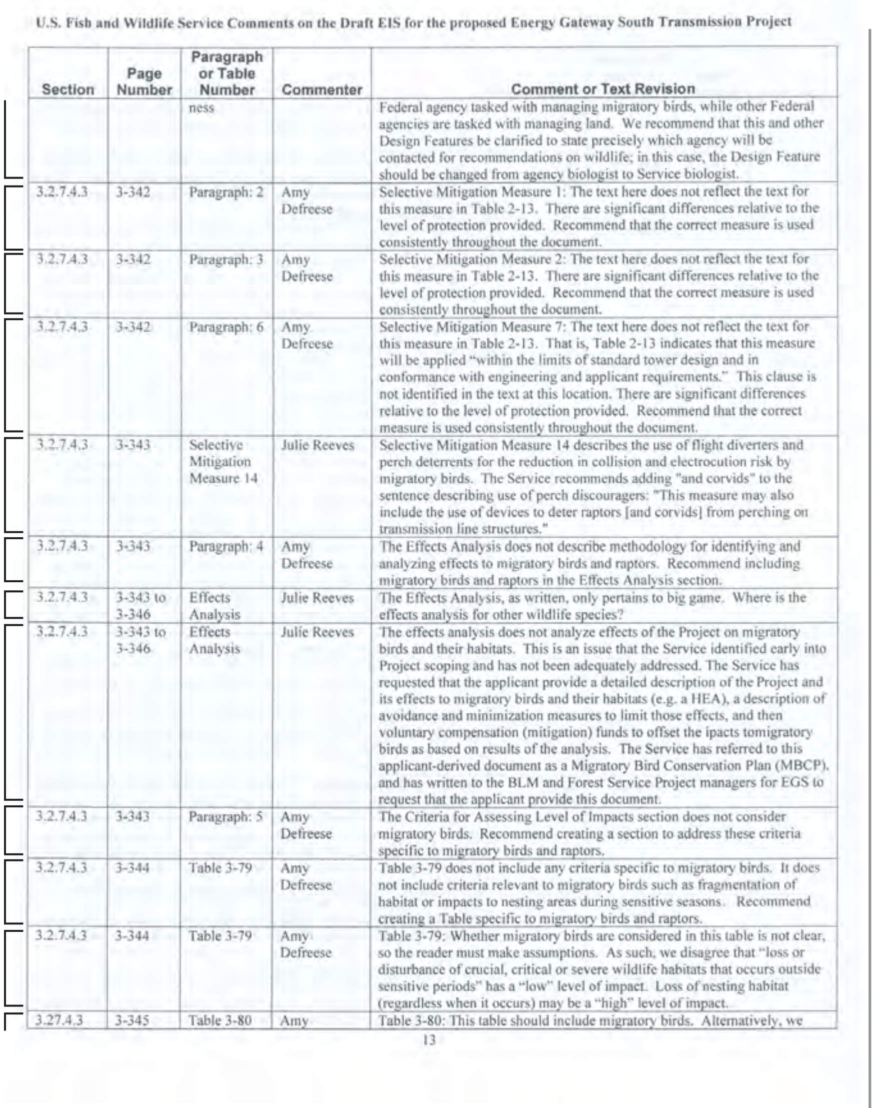
F2ci Terms have been defined in Appendix J, Section J.8. Reference to this section has been made where appropriate.

F2cj The recommended modification is reflected in the text of the Final EIS.

F2ck Design Feature 6 relates to BLM or USFS biologists tasked with ensuring compliance with the POD during construction and maintenance activities, not identifying the seasonal restrictions to be included in the POD. These requirements will be established in the NEPA POD to be developed in coordination with the cooperating agencies and included as a condition of the BLM and USFS RODs. See also the response to Comment F2aa.

Comment(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2ck			ness		Federal agency tasked with managing migratory birds, while other Federal agencies are tasked with managing land. We recommend that this and other Design Features be clarified to state precisely which agency will be contacted for recommendations on wildlife; in this case, the Design Feature should be changed from agency biologist to Service biologist.
F2cl	3.2.7.4.3	3-342	Paragraph: 2	Amy Defreese	Selective Mitigation Measure 1: The text here does not reflect the text for this measure in Table 2-13. There are significant differences relative to the level of protection provided. Recommend that the correct measure is used consistently throughout the document.
F2cm	3.2.7.4.3	3-342	Paragraph: 3	Amy Defreese	Selective Mitigation Measure 2: The text here does not reflect the text for this measure in Table 2-13. There are significant differences relative to the level of protection provided. Recommend that the correct measure is used consistently throughout the document.
F2cn	3.2.7.4.3	3-342	Paragraph: 6	Amy Defreese	Selective Mitigation Measure 7: The text here does not reflect the text for this measure in Table 2-13. That is, Table 2-13 indicates that this measure will be applied "within the limits of standard tower design and in conformance with engineering and applicant requirements." This clause is not identified in the text at this location. There are significant differences relative to the level of protection provided. Recommend that the correct measure is used consistently throughout the document.
F2co	3.2.7.4.3	3-343	Selective Mitigation Measure 14	Julie Reeves	Selective Mitigation Measure 14 describes the use of flight diverters and perch deterrents for the reduction in collision and electrocution risk by migratory birds. The Service recommends adding "and corvids" to the sentence describing use of perch discouragers: "This measure may also include the use of devices to deter raptors [and corvids] from perching on transmission line structures."
F2cp	3.2.7.4.3	3-343	Paragraph: 4	Amy Defreese	The Effects Analysis does not describe methodology for identifying and analyzing effects to migratory birds and raptors. Recommend including migratory birds and raptors in the Effects Analysis section.
F2cq	3.2.7.4.3	3-343 to 3-346	Effects Analysis	Julie Reeves	The Effects Analysis, as written, only pertains to big game. Where is the effects analysis for other wildlife species?
F2cr	3.2.7.4.3	3-343 to 3-346	Effects Analysis	Julie Reeves	The effects analysis does not analyze effects of the Project on migratory birds and their habitats. This is an issue that the Service identified early into Project scoping and has not been adequately addressed. The Service has requested that the applicant provide a detailed description of the Project and its effects to migratory birds and their habitats (e.g. a HEA), a description of avoidance and minimization measures to limit those effects, and then voluntary compensation (mitigation) funds to offset the ipacts tomigratory birds as based on results of the analysis. The Service has referred to this applicant-derived document as a Migratory Bird Conservation Plan (MBCP), and has written to the BLM and Forest Service Project managers for EGS to request that the applicant provide this document.
F2cs	3.2.7.4.3	3-343	Paragraph: 5	Amy Defreese	The Criteria for Assessing Level of Impacts section does not consider migratory birds. Recommend creating a section to address these criteria specific to migratory birds and raptors.
F2ct	3.2.7.4.3	3-344	Table 3-79	Amy Defreese	Table 3-79 does not include any criteria specific to migratory birds. It does not include criteria relevant to migratory birds such as fragmentation of habitat or impacts to nesting areas during sensitive seasons. Recommend creating a Table specific to migratory birds and raptors.
F2cu	3.2.7.4.3	3-344	Table 3-79	Amy Defreese	Table 3-79: Whether migratory birds are considered in this table is not clear, so the reader must make assumptions. As such, we disagree that "loss or disturbance of crucial, critical or severe wildlife habitats that occurs outside sensitive periods" has a "low" level of impact. Loss of nesting habitat (regardless when it occurs) may be a "high" level of impact.
F2cv	3.27.4.3	3-345	Table 3-80	Amy	Table 3-80: This table should include migratory birds. Alternatively, we

13

Response(s)

F2cl The text referenced in Section 3.2.7.4.3 is intended to describe how the selective mitigation measure (which is applicable to multiple resources) will be applied for wildlife resources. Selective mitigation measures are now being presented to account for the variation between multiple resources while reflecting how it is being applied by individual resources. Further, the BLM will refine specific application of selective mitigation measures in cooperation with cooperating agencies, including the FWS, and the Applicant during preparation of the POD. The process for application and agency review of selective mitigation measures applied during preparation of the POD is described in Section 2.4 of the Final EIS. As described in Section 2.5.1.2 and 3.2.8.4.1 under the heading Mitigation Planning and Effectiveness, the results of preconstruction surveys would be used by the agencies to refine the mitigation requirements and further inform the POD.

F2cm See response to Comment F2cl.

F2cn See response to Comment F2cl.

F2co See response to Comment F2cg.

F2cp See response to Comment F2bo.

F2cq The commenter references a subsection of the wildlife analysis describing the quantitative comparison of alternative routes and route variations based on the data available for analysis. The full wildlife effects analysis is contained in Section 3.2.7.4.3 and includes identification of potential effects on birds, raptors, mammals, big game, and reptiles.

F2cr The analysis of potential effects on migratory birds has been revised and is included in Section 3.2.9 of the Final EIS. The BLM, FWS, and the Applicant are engaged in ongoing coordination regarding the potential need for mitigation for impacts on migratory bird habitats. Mitigation requirements will be outlined in the BLM ROD.

F2cs See response to Comment F2bo.

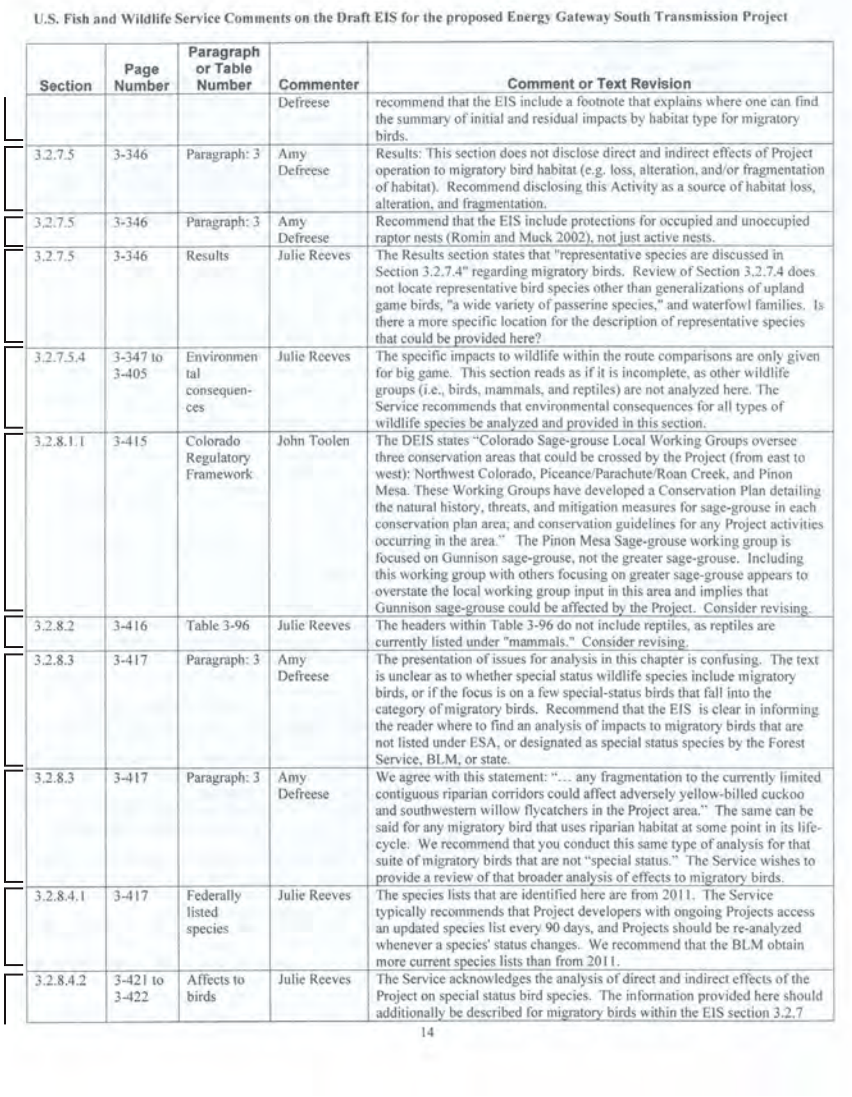
F2ct See response to Comment F2bo.

F2cu The criteria for assessing level of impacts on wildlife were developed in coordination with the Biological Resource Task Group established for the Project (refer to Section 6.2.2.1 for a description), including biologists from FWS. The analysis for migratory birds was revised and expanded for the Final EIS. The revised analysis is presented in Section 3.2.9

F2cv See response to Comment F2bo.

Comment(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2cv				Defreese	recommend that the EIS include a footnote that explains where one can find the summary of initial and residual impacts by habitat type for migratory birds.
F2cw	3.2.7.5	3-346	Paragraph: 3	Amy Defreese	Results: This section does not disclose direct and indirect effects of Project operation to migratory bird habitat (e.g. loss, alteration, and/or fragmentation of habitat). Recommend disclosing this Activity as a source of habitat loss, alteration, and fragmentation.
F2cx	3.2.7.5	3-346	Paragraph: 3	Amy Defreese	Recommend that the EIS include protections for occupied and unoccupied raptor nests (Romin and Muck 2002), not just active nests.
F2cy	3.2.7.5	3-346	Results	Julie Reeves	The Results section states that "representative species are discussed in Section 3.2.7.4" regarding migratory birds. Review of Section 3.2.7.4 does not locate representative bird species other than generalizations of upland game birds, "a wide variety of passerine species," and waterfowl families. Is there a more specific location for the description of representative species that could be provided here?
F2cz	3.2.7.5.4	3-347 to 3-405	Environmental consequences	Julie Reeves	The specific impacts to wildlife within the route comparisons are only given for big game. This section reads as if it is incomplete, as other wildlife groups (i.e., birds, mammals, and reptiles) are not analyzed here. The Service recommends that environmental consequences for all types of wildlife species be analyzed and provided in this section.
F2da	3.2.8.1.1	3-415	Colorado Regulatory Framework	John Toolen	The DEIS states "Colorado Sage-grouse Local Working Groups oversee three conservation areas that could be crossed by the Project (from east to west): Northwest Colorado, Piceance/Parachute/Roan Creek, and Pinon Mesa. These Working Groups have developed a Conservation Plan detailing the natural history, threats, and mitigation measures for sage-grouse in each conservation plan area; and conservation guidelines for any Project activities occurring in the area." The Pinon Mesa Sage-grouse working group is focused on Gunnison sage-grouse, not the greater sage-grouse. Including this working group with others focusing on greater sage-grouse appears to overstate the local working group input in this area and implies that Gunnison sage-grouse could be affected by the Project. Consider revising.
F2db	3.2.8.2	3-416	Table 3-96	Julie Reeves	The headers within Table 3-96 do not include reptiles, as reptiles are currently listed under "mammals." Consider revising.
F2dc	3.2.8.3	3-417	Paragraph: 3	Amy Defreese	The presentation of issues for analysis in this chapter is confusing. The text is unclear as to whether special status wildlife species include migratory birds, or if the focus is on a few special-status birds that fall into the category of migratory birds. Recommend that the EIS is clear in informing the reader where to find an analysis of impacts to migratory birds that are not listed under ESA, or designated as special status species by the Forest Service, BLM, or state.
F2dd	3.2.8.3	3-417	Paragraph: 3	Amy Defreese	We agree with this statement: "… any fragmentation to the currently limited contiguous riparian corridors could affect adversely yellow-billed cuckoo and southwestern willow flycatchers in the Project area." The same can be said for any migratory bird that uses riparian habitat at some point in its life-cycle. We recommend that you conduct this same type of analysis for that suite of migratory birds that are not "special status." The Service wishes to provide a review of that broader analysis of effects to migratory birds.
F2de	3.2.8.4.1	3-417	Federally listed species	Julie Reeves	The species lists that are identified here are from 2011. The Service typically recommends that Project developers with ongoing Projects access an updated species list every 90 days, and Projects should be re-analyzed whenever a species' status changes. We recommend that the BLM obtain more current species lists than from 2011.
F2df	3.2.8.4.2	3-421 to 3-422	Affects to birds	Julie Reeves	The Service acknowledges the analysis of direct and indirect effects of the Project on special status bird species. The information provided here should additionally be described for migratory birds within the EIS section 3.2.7

14

Response(s)

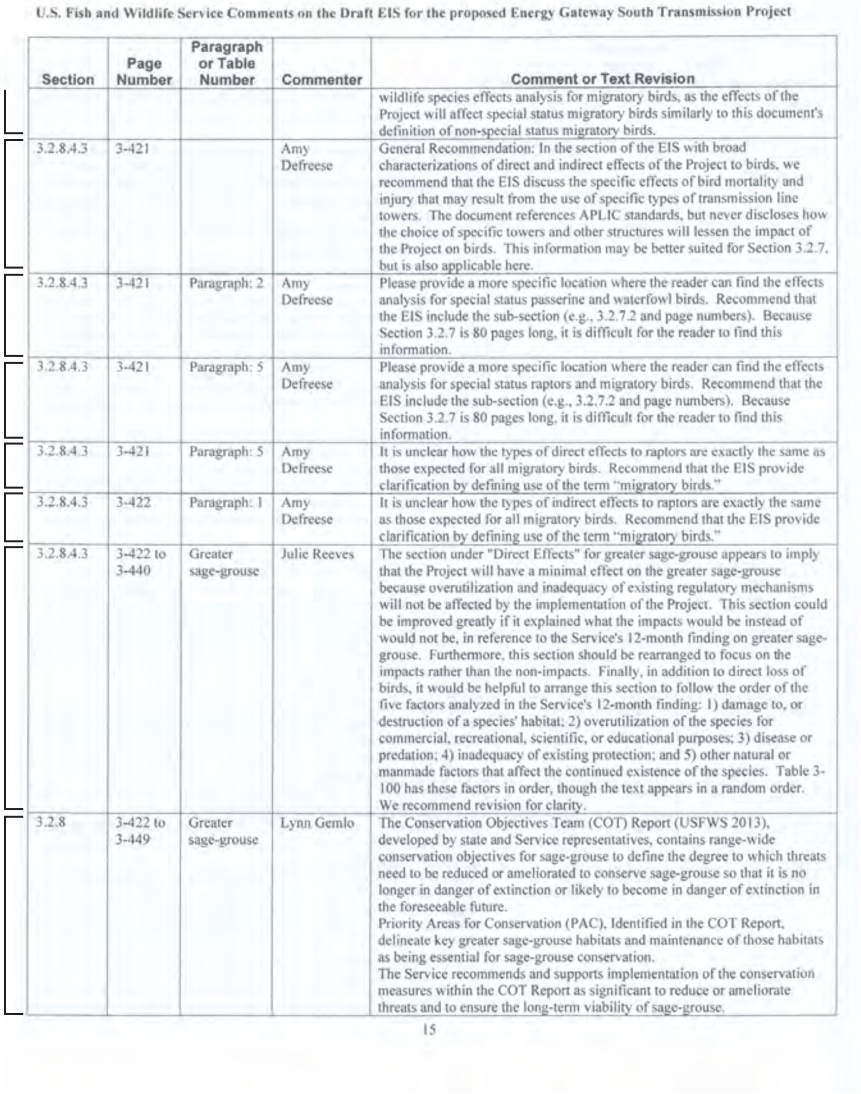
F2cw	See response to Comment F2bo.
F2cx	Comment noted and text has been edited for clarity. Agency guidelines for raptor protection would be followed as identified in Chapter 2, Design Feature 8. Guidelines identified in Romin and Muck (2002) are directly referenced in Appendix J, where this design feature is explained further.
F2cy	The analysis for migratory birds was revised and expanded for the Final EIS. The revised analysis is presented in Section 3.2.9. A list of migratory birds known or likely to occur in the Project area is included in Appendix J, Table J-6.
F2cz	Data needed to conduct a quantitative comparison of alternative routes and route variations were not available for all wildlife resources. Text in Section 3.2.7.4.3 under the heading Effects Analysis has been revised for clarity. Potential direct and indirect effects of the Project on birds, other mammals, and reptiles are described in Section 3.2.7.4.3. Analysis of potential impacts on habitat types likely to be used by mammal and reptile species is included in Section 3.2.5.
F2da	The recommended modification is reflected in the Final EIS. The Pinon Mesa sage-grouse working group is no longer listed in this section.
F2db	This issue has been corrected.
F2dc	See response to Comment F2bo.
F2dd	See response to Comment F2bo.
F2de	Updated species lists were obtained and incorporated into the analysis for the Final EIS.
F2df	See response to Comment F2bo.

Comment(s)

Response(s)

F2

U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

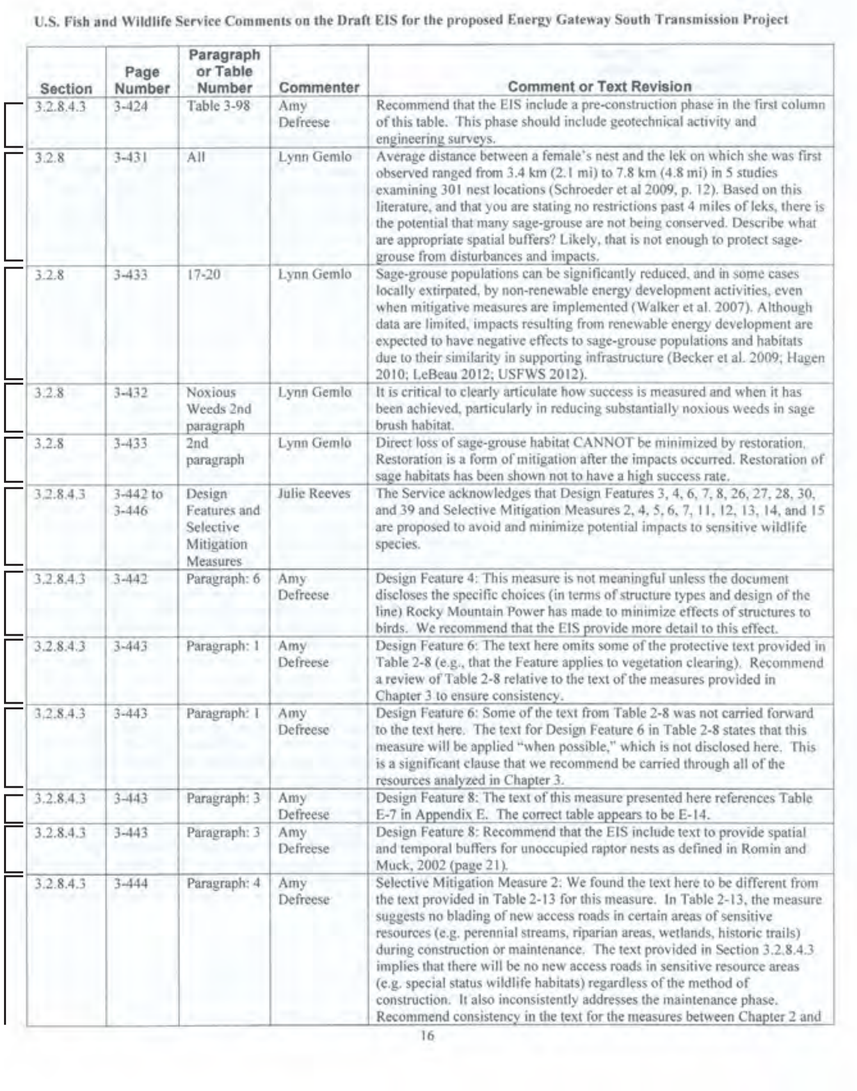
	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2df					wildlife species effects analysis for migratory birds, as the effects of the Project will affect special status migratory birds similarly to this document's definition of non-special status migratory birds.
F2dg	3.2.8.4.3	3-421		Amy Defreese	General Recommendation: In the section of the EIS with broad characterizations of direct and indirect effects of the Project to birds, we recommend that the EIS discuss the specific effects of bird mortality and injury that may result from the use of specific types of transmission line towers. The document references APLIC standards, but never discloses how the choice of specific towers and other structures will lessen the impact of the Project on birds. This information may be better suited for Section 3.2.7, but is also applicable here.
F2dh	3.2.8.4.3	3-421	Paragraph: 2	Amy Defreese	Please provide a more specific location where the reader can find the effects analysis for special status passerine and waterfowl birds. Recommend that the EIS include the sub-section (e.g., 3.2.7.2 and page numbers). Because Section 3.2.7 is 80 pages long, it is difficult for the reader to find this information.
F2di	3.2.8.4.3	3-421	Paragraph: 5	Amy Defreese	Please provide a more specific location where the reader can find the effects analysis for special status raptors and migratory birds. Recommend that the EIS include the sub-section (e.g., 3.2.7.2 and page numbers). Because Section 3.2.7 is 80 pages long, it is difficult for the reader to find this information.
F2dj	3.2.8.4.3	3-421	Paragraph: 5	Amy Defreese	It is unclear how the types of direct effects to raptors are exactly the same as those expected for all migratory birds. Recommend that the EIS provide clarification by defining use of the term "migratory birds."
F2dk	3.2.8.4.3	3-422	Paragraph: 1	Amy Defreese	It is unclear how the types of indirect effects to raptors are exactly the same as those expected for all migratory birds. Recommend that the EIS provide clarification by defining use of the term "migratory birds."
F2dl	3.2.8.4.3	3-422 to 3-440	Greater sage-grouse	Julie Reeves	The section under "Direct Effects" for greater sage-grouse appears to imply that the Project will have a minimal effect on the greater sage-grouse because overutilization and inadequacy of existing regulatory mechanisms will not be affected by the implementation of the Project. This section could be improved greatly if it explained what the impacts would be instead of would not be, in reference to the Service's 12-month finding on greater sage-grouse. Furthermore, this section should be rearranged to focus on the impacts rather than the non-impacts. Finally, in addition to direct loss of birds, it would be helpful to arrange this section to follow the order of the five factors analyzed in the Service's 12-month finding: 1) damage to, or destruction of a species' habitat; 2) overutilization of the species for commercial, recreational, scientific, or educational purposes; 3) disease or predation; 4) inadequacy of existing protection; and 5) other natural or manmade factors that affect the continued existence of the species. Table 3-100 has these factors in order, though the text appears in a random order. We recommend revision for clarity.
F2dm	3.2.8	3-422 to 3-449	Greater sage-grouse	Lynn Gemlo	The Conservation Objectives Team (COT) Report (USFWS 2013), developed by state and Service representatives, contains range-wide conservation objectives for sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future. Priority Areas for Conservation (PAC), Identified in the COT Report, delineate key greater sage-grouse habitats and maintenance of those habitats as being essential for sage-grouse conservation. The Service recommends and supports implementation of the conservation measures within the COT Report as significant to reduce or ameliorate threats and to ensure the long-term viability of sage-grouse.

15

F2dg	See response to Comment F2bo.
F2dh	The comparison of local routing options, or route variations, considered for some segments of the alternative routes has been moved to Appendix F
F2di	See response to Comment F2dh.
F2dj	The analysis for migratory birds was revised and expanded for the Final EIS.
F2dk	See response to Comment F2dj.
F2dl	Text has been edited for clarity.
F2dm	Comment noted. Under any of the alternative routes and route variations, the Applicant would develop a voluntary sage-grouse conservation and mitigation plan in coordination with the agencies for the Agency Preferred Alternative (refer to Appendix K). The mitigation plan will offer measures to avoid, minimize, or compensate for all Project effects characterized by the framework and identified in the EIS that could not be mitigated or avoided using measures in BLM or other agency plans, including losses of habitat services quantified using the Habitat Equivalency Analysis.

Comment(s)

F2 U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2dn	3.2.8.4.3	3-424	Table 3-98	Amy Defreese	Recommend that the EIS include a pre-construction phase in the first column of this table. This phase should include geotechnical activity and engineering surveys.
F2do	3.2.8	3-431	All	Lynn Gemlo	Average distance between a female's nest and the lek on which she was first observed ranged from 3.4 km (2.1 mi) to 7.8 km (4.8 mi) in 5 studies examining 301 nest locations (Schroeder et al 2009, p. 12). Based on this literature, and that you are stating no restrictions past 4 miles of leks, there is the potential that many sage-grouse are not being conserved. Describe what are appropriate spatial buffers? Likely, that is not enough to protect sage-grouse from disturbances and impacts.
F2dp	3.2.8	3-433	17-20	Lynn Gemlo	Sage-grouse populations can be significantly reduced, and in some cases locally extirpated, by non-renewable energy development activities, even when mitigative measures are implemented (Walker et al. 2007). Although data are limited, impacts resulting from renewable energy development are expected to have negative effects to sage-grouse populations and habitats due to their similarity in supporting infrastructure (Becker et al. 2009; Hagen 2010; LeBeau 2012; USFWS 2012).
F2dq	3.2.8	3-432	Noxious Weeds 2nd paragraph	Lynn Gemlo	It is critical to clearly articulate how success is measured and when it has been achieved, particularly in reducing substantially noxious weeds in sage brush habitat.
F2dr	3.2.8	3-433	2nd paragraph	Lynn Gemlo	Direct loss of sage-grouse habitat CANNOT be minimized by restoration. Restoration is a form of mitigation after the impacts occurred. Restoration of sage habitats has been shown not to have a high success rate.
F2ds	3.2.8.4.3	3-442 to 3-446	Design Features and Selective Mitigation Measures	Julie Reeves	The Service acknowledges that Design Features 3, 4, 6, 7, 8, 26, 27, 28, 30, and 39 and Selective Mitigation Measures 2, 4, 5, 6, 7, 11, 12, 13, 14, and 15 are proposed to avoid and minimize potential impacts to sensitive wildlife species.
F2dt	3.2.8.4.3	3-442	Paragraph: 6	Amy Defreese	Design Feature 4: This measure is not meaningful unless the document discloses the specific choices (in terms of structure types and design of the line) Rocky Mountain Power has made to minimize effects of structures to birds. We recommend that the EIS provide more detail to this effect.
F2du	3.2.8.4.3	3-443	Paragraph: 1	Amy Defreese	Design Feature 6: The text here omits some of the protective text provided in Table 2-8 (e.g., that the Feature applies to vegetation clearing). Recommend a review of Table 2-8 relative to the text of the measures provided in Chapter 3 to ensure consistency.
F2dv	3.2.8.4.3	3-443	Paragraph: 1	Amy Defreese	Design Feature 6: Some of the text from Table 2-8 was not carried forward to the text here. The text for Design Feature 6 in Table 2-8 states that this measure will be applied "when possible," which is not disclosed here. This is a significant clause that we recommend be carried through all of the resources analyzed in Chapter 3.
F2dw	3.2.8.4.3	3-443	Paragraph: 3	Amy Defreese	Design Feature 8: The text of this measure presented here references Table E-7 in Appendix E. The correct table appears to be E-14.
F2dx	3.2.8.4.3	3-443	Paragraph: 3	Amy Defreese	Design Feature 8: Recommend that the EIS include text to provide spatial and temporal buffers for unoccupied raptor nests as defined in Romin and Muck, 2002 (page 21).
F2dy	3.2.8.4.3	3-444	Paragraph: 4	Amy Defreese	Selective Mitigation Measure 2: We found the text here to be different from the text provided in Table 2-13 for this measure. In Table 2-13, the measure suggests no blading of new access roads in certain areas of sensitive resources (e.g. perennial streams, riparian areas, wetlands, historic trails) during construction or maintenance. The text provided in Section 3.2.8.4.3 implies that there will be no new access roads in sensitive resource areas (e.g. special status wildlife habitats) regardless of the method of construction. It also inconsistently addresses the maintenance phase. Recommend consistency in the text for the measures between Chapter 2 and

Response(s)

F2dn	Table has been edited as requested.
F2do	Text has been edited to include reference to the literature cited in the comment. Text acknowledges that the 4-mile restriction may not protect all nests and outlines actions that would be taken to avoid and minimize effects on nests outside the 4-mile buffer.
F2dp	The studies and effects described in these references are discussed under the headings Fragmentation of Sage-Grouse Habitats due to the Introduction of Tall Structures, Increased Electromagnetic Fields, and Construction of New Roads and Disturbance to Sage-grouse and Disruption of Breeding Activities due to Increased Human Presence and Noise at Lek Locations in Section 3.2.8.4.3. Walker et al. (2007) and LeBeau (2012) are cited as references in these sections. Becker et al. (2009), Hagen (2010) and FWS (2012) provide reviews of the primary literature using references that are already cited in these sections.
F2dq	As described in Section 3.2.8.4.3, a Noxious Weed Management Plan and a Reclamation, Revegetation, and Monitoring Plan would be developed and incorporated into the POD. The Noxious Weed Management Plan would be developed in compliance with BLM Manual 9015 (Integrated Weed Management) and USFS Manual 2080 (Noxious Weeds) (Section 2.3.5) and would outline requirements for noxious weed inventory, monitoring, and reduction measures required to prevent the spread of noxious weeds as a result of Project construction or maintenance.
F2dr	Comment noted.
F2ds	Comment noted.
F2dt	The analysis for migratory birds was revised and expanded for the Final EIS. The revised analysis, including discussion regarding structure design, is presented in Section 3.2.9.
F2du	See next page for response to F2du.
F2dv	See next page for response to F2dv.
F2dw	See next page for response to F2dw.
F2dx	See next page for response to F2dx.
F2dy	See next page for response to F2dy.

Comment(s)

Response(s) - continued

F2 **U.S. Fish and Wildlife Service (cont.)**

F2du The text has been modified as recommended. The paragraph now reads:

"Vegetation clearing and other construction and maintenance activities, when possible, would avoid areas supporting actively nesting birds during the migratory bird nesting season, between February 1 and August 31; however dates may vary depending on species, current environmental conditions, results of preconstruction surveys, and approval by agency biologists or agency-approved environmental inspectors in coordination with agency biologists. This design feature will restrict human activity to avoid disturbing migratory bird nests during species specific breeding seasons."

F2dv Refer to response for Comment F2du.

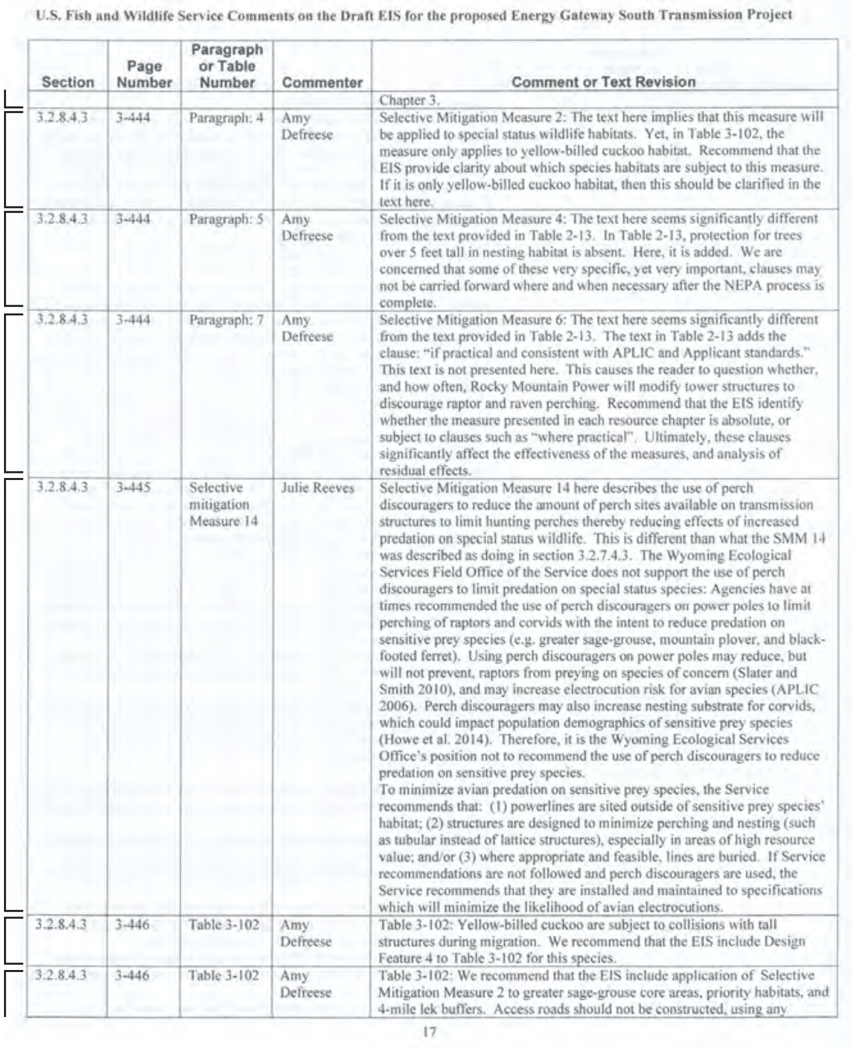
F2dw The recommended modification is now reflected in Design Feature 8. The text now references Table J-15 in Appendix J.

F2dx Design Feature 8 references following agency guidelines for raptor protection, including monitoring nest activity during construction and other recommendations presented in Romin and Muck (2002). Romin and Muck (2002) does not provide specific spatial and temporal buffers for unoccupied nests and, therefore, they are not presented in the EIS.

F2dy The text in Section 3.2.8.4.3 referenced in the comment is intended to describe how the selective mitigation measure (that is applicable to multiple resources) will be applied for special status wildlife resources. BLM will refine specific application of selective mitigation measures in cooperation with cooperating agencies, including the FWS, and the Applicant during preparation of the POD. The process for application and agency review of selective mitigation measures applied during preparation of the POD is described in Section 2.4 of the Final EIS. As described in Section 2.5.1.2 and 3.2.8.4.1 under the heading Mitigation Planning and Effectiveness, the results of preconstruction surveys would be used by the agencies to refine the mitigation requirements and further inform the construction POD.

Comment(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2dy					Chapter 3.
F2dz	3.2.8.4.3	3-444	Paragraph: 4	Amy Defreese	Selective Mitigation Measure 2: The text here implies that this measure will be applied to special status wildlife habitats. Yet, in Table 3-102, the measure only applies to yellow-billed cuckoo habitat. Recommend that the EIS provide clarity about which species habitats are subject to this measure. If it is only yellow-billed cuckoo habitat, then this should be clarified in the text here.
F2ea	3.2.8.4.3	3-444	Paragraph: 5	Amy Defreese	Selective Mitigation Measure 4: The text here seems significantly different from the text provided in Table 2-13. In Table 2-13, protection for trees over 5 feet tall in nesting habitat is absent. Here, it is added. We are concerned that some of these very specific, yet very important, clauses may not be carried forward where and when necessary after the NEPA process is complete.
F2eb	3.2.8.4.3	3-444	Paragraph: 7	Amy Defreese	Selective Mitigation Measure 6: The text here seems significantly different from the text provided in Table 2-13. The text in Table 2-13 adds the clause: "if practical and consistent with APLIC and Applicant standards." This text is not presented here. This causes the reader to question whether, and how often, Rocky Mountain Power will modify tower structures to discourage raptor and raven perching. Recommend that the EIS identify whether the measure presented in each resource chapter is absolute, or subject to clauses such as "where practical". Ultimately, these clauses significantly affect the effectiveness of the measures, and analysis of residual effects.
F2ec	3.2.8.4.3	3-445	Selective mitigation Measure 14	Julie Reeves	Selective Mitigation Measure 14 here describes the use of perch discouragers to reduce the amount of perch sites available on transmission structures to limit hunting perches thereby reducing effects of increased predation on special status wildlife. This is different than what the SMM 14 was described as doing in section 3.2.7.4.3. The Wyoming Ecological Services Field Office of the Service does not support the use of perch discouragers to limit predation on special status species: Agencies have at times recommended the use of perch discouragers on power poles to limit perching of raptors and corvids with the intent to reduce predation on sensitive prey species (e.g. greater sage-grouse, mountain plover, and black-footed ferret). Using perch discouragers on power poles may reduce, but will not prevent, raptors from preying on species of concern (Slater and Smith 2010), and may increase electrocution risk for avian species (APLIC 2006). Perch discouragers may also increase nesting substrate for corvids, which could impact population demographics of sensitive prey species (Howe et al. 2014). Therefore, it is the Wyoming Ecological Services Office's position not to recommend the use of perch discouragers to reduce predation on sensitive prey species. To minimize avian predation on sensitive prey species, the Service recommends that: (1) powerlines are sited outside of sensitive prey species' habitat; (2) structures are designed to minimize perching and nesting (such as tubular instead of lattice structures), especially in areas of high resource value; and/or (3) where appropriate and feasible, lines are buried. If Service recommendations are not followed and perch discouragers are used, the Service recommends that they are installed and maintained to specifications which will minimize the likelihood of avian electrocutions.
F2ed	3.2.8.4.3	3-446	Table 3-102	Amy Defreese	Table 3-102: Yellow-billed cuckoo are subject to collisions with tall structures during migration. We recommend that the EIS include Design Feature 4 to Table 3-102 for this species.
F2ee	3.2.8.4.3	3-446	Table 3-102	Amy Defreese	Table 3-102: We recommend that the EIS include application of Selective Mitigation Measure 2 to greater sage-grouse core areas, priority habitats, and 4-mile lek buffers. Access roads should not be constructed, using any

17

Response(s)

F2dz As described in Section 2.5.1.2 and 3.2.8.4.1 under the heading Mitigation Planning and Effectiveness, the results of preconstruction surveys would be used by the agencies to refine the mitigation requirements and further inform the POD. The discussion referenced in the comment describes how the specific selective mitigation measure could be used to reduce impacts on a variety of special status wildlife habitats. The locations where each selective mitigation measure will be applied will be determined on completion of the preconstruction surveys. Table 3-102 in the Final EIS describes specific habitats where the agencies have identified this measure to be both effective and feasible based on the analysis conducted for the Final EIS.

F2ea Text has been edited for clarity. The text in Section 3.2.8.4.3 referenced in the comment is intended to describe how the selective mitigation measure (that is applicable to multiple resources) will be applied for special status wildlife resources.

F2eb The text in Section 3.2.8.4.3 referenced in the comment is intended to describe how the selective mitigation measure (that is applicable to multiple resources) will be applied for special status wildlife resources. BLM will refine specific application of selective mitigation measures in cooperation with cooperating agencies, including the FWS, and the Applicant during preparation of the POD. The process for application and agency review of selective mitigation measures applied during preparation of the POD is described in Section 2.4 of the Final EIS. As described in Section 2.5.1.2 and 3.2.8.4.1 under the heading Mitigation Planning and Effectiveness, the results of preconstruction surveys would be used by the agencies to refine the mitigation requirements and further inform the construction POD.

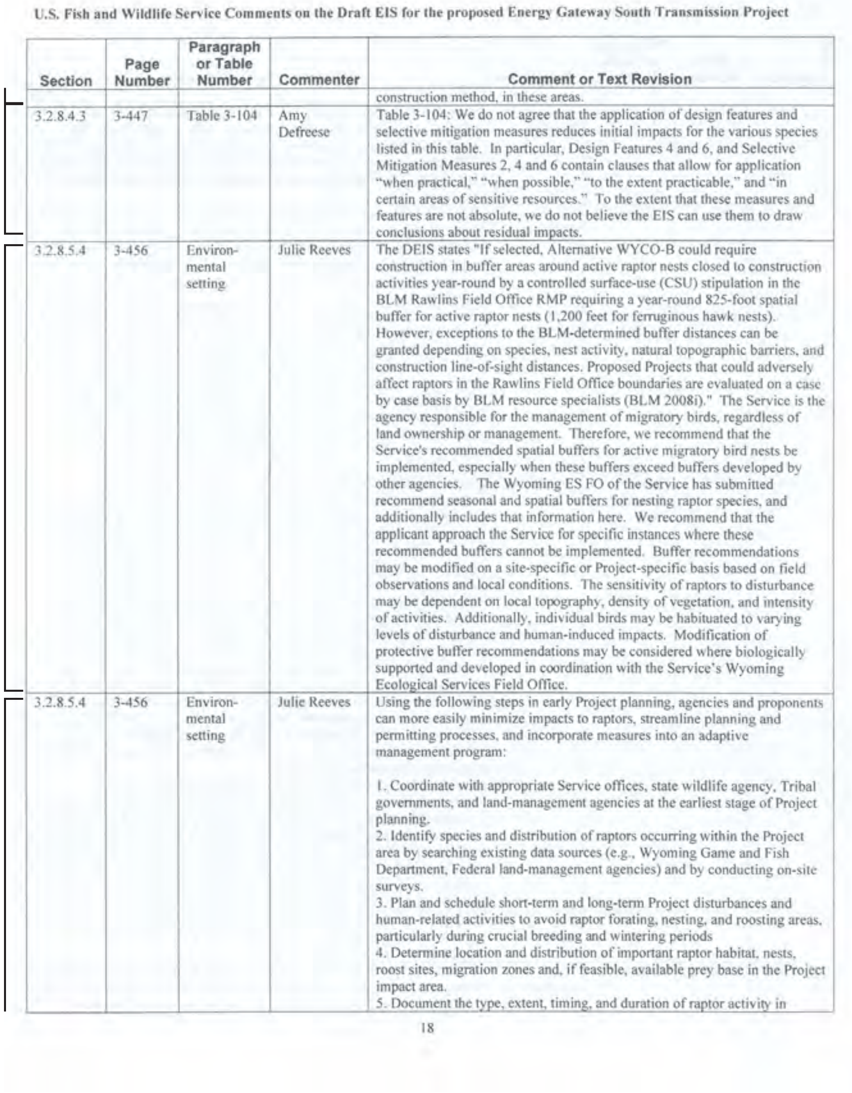
F2ec Application of Selective Mitigation Measures 6 and 14 have been reconsidered in light of comments received and discussion with staff from the FWS. Text has been edited to reflect this change.

F2ed The recommended modification is reflected in Table 3-102 of the Final EIS.

F2ee Restricting construction of access roads in the referenced areas would prevent the Applicant from achieving their interests and objectives for the Project. Potential high adverse impacts in sage-grouse habitats will be minimized through the application of the design features and selective mitigation measures listed in Table 3-102. High residual impacts on sage-grouse habitat remaining after application of the design features and selective mitigation measures will be addressed via offsite mitigation as described in Appendix K.

Comment(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2ee					construction method, in these areas.
F2ef	3.2.8.4.3	3-447	Table 3-104	Amy Defreese	Table 3-104: We do not agree that the application of design features and selective mitigation measures reduces initial impacts for the various species listed in this table. In particular, Design Features 4 and 6, and Selective Mitigation Measures 2, 4 and 6 contain clauses that allow for application "when practical," "when possible," "to the extent practicable," and "in certain areas of sensitive resources." To the extent that these measures and features are not absolute, we do not believe the EIS can use them to draw conclusions about residual impacts.
F2eg	3.2.8.5.4	3-456	Environ-mental setting	Julie Reeves	The DEIS states "If selected, Alternative WYCO-B could require construction in buffer areas around active raptor nests closed to construction activities year-round by a controlled surface-use (CSU) stipulation in the BLM Rawlins Field Office RMP requiring a year-round 825-foot spatial buffer for active raptor nests (1,200 feet for ferruginous hawk nests). However, exceptions to the BLM-determined buffer distances can be granted depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. Proposed Projects that could adversely affect raptors in the Rawlins Field Office boundaries are evaluated on a case by case basis by BLM resource specialists (BLM 2008i)." The Service is the agency responsible for the management of migratory birds, regardless of land ownership or management. Therefore, we recommend that the Service's recommended spatial buffers for active migratory bird nests be implemented, especially when these buffers exceed buffers developed by other agencies. The Wyoming ES FO of the Service has submitted recommend seasonal and spatial buffers for nesting raptor species, and additionally includes that information here. We recommend that the applicant approach the Service for specific instances where these recommended buffers cannot be implemented. Buffer recommendations may be modified on a site-specific or Project-specific basis based on field observations and local conditions. The sensitivity of raptors to disturbance may be dependent on local topography, density of vegetation, and intensity of activities. Additionally, individual birds may be habituated to varying levels of disturbance and human-induced impacts. Modification of protective buffer recommendations may be considered where biologically supported and developed in coordination with the Service's Wyoming Ecological Services Field Office.
F2eh	3.2.8.5.4	3-456	Environ-mental setting	Julie Reeves	Using the following steps in early Project planning, agencies and proponents can more easily minimize impacts to raptors, streamline planning and permitting processes, and incorporate measures into an adaptive management program: 1. Coordinate with appropriate Service offices, state wildlife agency, Tribal governments, and land-management agencies at the earliest stage of Project planning. 2. Identify species and distribution of raptors occurring within the Project area by searching existing data sources (e.g., Wyoming Game and Fish Department, Federal land-management agencies) and by conducting on-site surveys. 3. Plan and schedule short-term and long-term Project disturbances and human-related activities to avoid raptor forating, nesting, and roosting areas, particularly during crucial breeding and wintering periods 4. Determine location and distribution of important raptor habitat, nests, roost sites, migration zones and, if feasible, available prey base in the Project impact area. 5. Document the type, extent, timing, and duration of raptor activity in

18

Response(s)

F2ef

An Agency Interdisciplinary Team, which included staff from the FWS, developed the criteria for assessing the level of potential impacts for wildlife species, initial impacts, and residual impacts after the selective mitigation measures are applied.

F2eg

The text referenced in the comment describes a management action prescribed in the BLM Rawlins Resource Management Plan for management of areas around inactive raptor nests. The text does not imply any designation of agency responsibility regarding management of migratory birds. The FWS acknowledges the agency's understanding of these stipulations in Comment F2ei.

F2eh

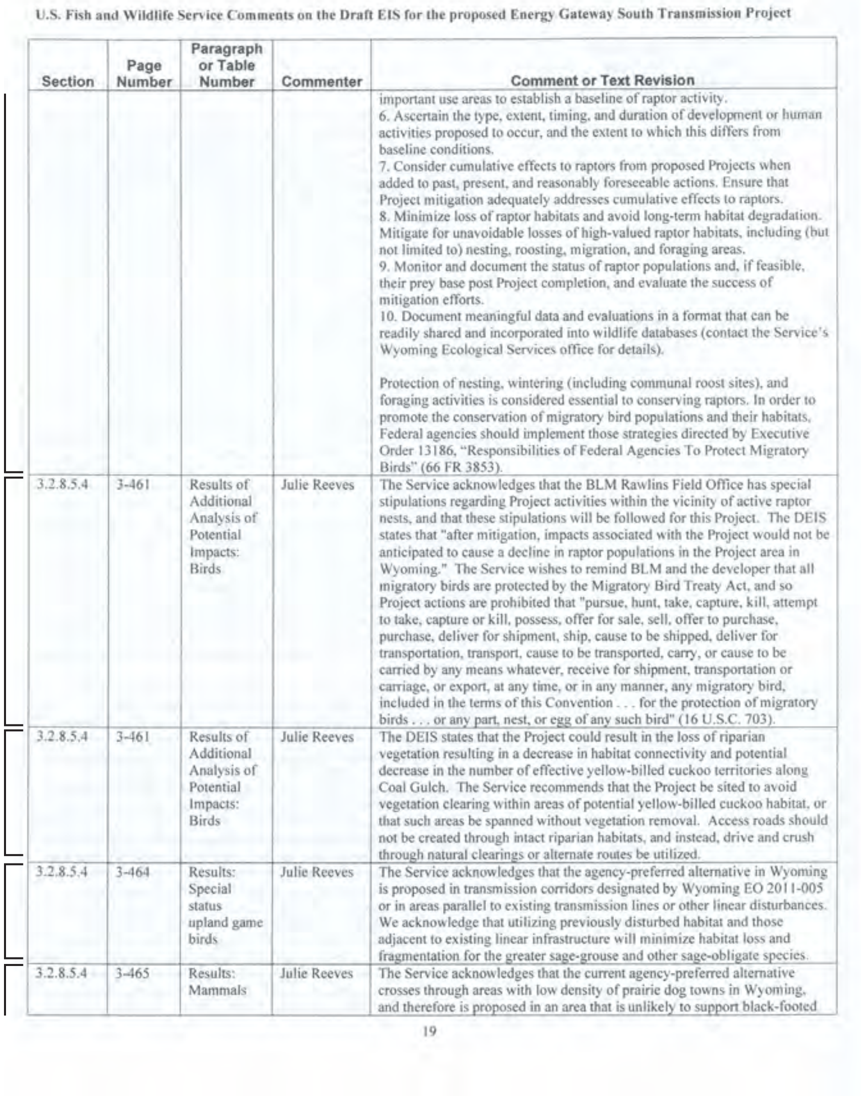
Comments noted. The BLM believes these recommendations are reflected in the approach to interagency coordination and impact analysis and mitigation planning executed in response to the applications for rights-of-way across federally administered lands. Also, the BLM has prepared the EIS in coordination with any studies or analyses required by the Fish and Wildlife Conservation Act (16 United States Code [U.S.C.] 661 et seq.), ESA (16 U.S.C. 1531 et seq.), and the National Historic Preservation Act, as 31 amended (16 U.S.C. 470 et seq.). Consultation and interagency coordination activities related to biological resources are summarized in Section 6.2.2.1.

Comment(s)

Response(s)

F2

U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2eh					important use areas to establish a baseline of raptor activity. 6. Ascertain the type, extent, timing, and duration of development or human activities proposed to occur, and the extent to which this differs from baseline conditions. 7. Consider cumulative effects to raptors from proposed Projects when added to past, present, and reasonably foreseeable actions. Ensure that Project mitigation adequately addresses cumulative effects to raptors. 8. Minimize loss of raptor habitats and avoid long-term habitat degradation. Mitigate for unavoidable losses of high-valued raptor habitats, including (but not limited to) nesting, roosting, migration, and foraging areas. 9. Monitor and document the status of raptor populations and, if feasible, their prey base post Project completion, and evaluate the success of mitigation efforts. 10. Document meaningful data and evaluations in a format that can be readily shared and incorporated into wildlife databases (contact the Service's Wyoming Ecological Services office for details). Protection of nesting, wintering (including communal roost sites), and foraging activities is considered essential to conserving raptors. In order to promote the conservation of migratory bird populations and their habitats, Federal agencies should implement those strategies directed by Executive Order 13186, "Responsibilities of Federal Agencies To Protect Migratory Birds" (66 FR 3853).
F2ei	3.2.8.5.4	3-461	Results of Additional Analysis of Potential Impacts: Birds	Julie Reeves	The Service acknowledges that the BLM Rawlins Field Office has special stipulations regarding Project activities within the vicinity of active raptor nests, and that these stipulations will be followed for this Project. The DEIS states that "after mitigation, impacts associated with the Project would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming." The Service wishes to remind BLM and the developer that all migratory birds are protected by the Migratory Bird Treaty Act, and so Project actions are prohibited that "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird" (16 U.S.C. 703).
F2ej	3.2.8.5.4	3-461	Results of Additional Analysis of Potential Impacts: Birds	Julie Reeves	The DEIS states that the Project could result in the loss of riparian vegetation resulting in a decrease in habitat connectivity and potential decrease in the number of effective yellow-billed cuckoo territories along Coal Gulch. The Service recommends that the Project be sited to avoid vegetation clearing within areas of potential yellow-billed cuckoo habitat, or that such areas be spanned without vegetation removal. Access roads should not be created through intact riparian habitats, and instead, drive and crush through natural clearings or alternate routes be utilized.
F2ek	3.2.8.5.4	3-464	Results: Special status upland game birds	Julie Reeves	The Service acknowledges that the agency-preferred alternative in Wyoming is proposed in transmission corridors designated by Wyoming EO 2011-005 or in areas parallel to existing transmission lines or other linear disturbances. We acknowledge that utilizing previously disturbed habitat and those adjacent to existing linear infrastructure will minimize habitat loss and fragmentation for the greater sage-grouse and other sage-obligate species.
F2el	3.2.8.5.4	3-465	Results: Mammals	Julie Reeves	The Service acknowledges that the current agency-preferred alternative crosses through areas with low density of prairie dog towns in Wyoming, and therefore is proposed in an area that is unlikely to support black-footed

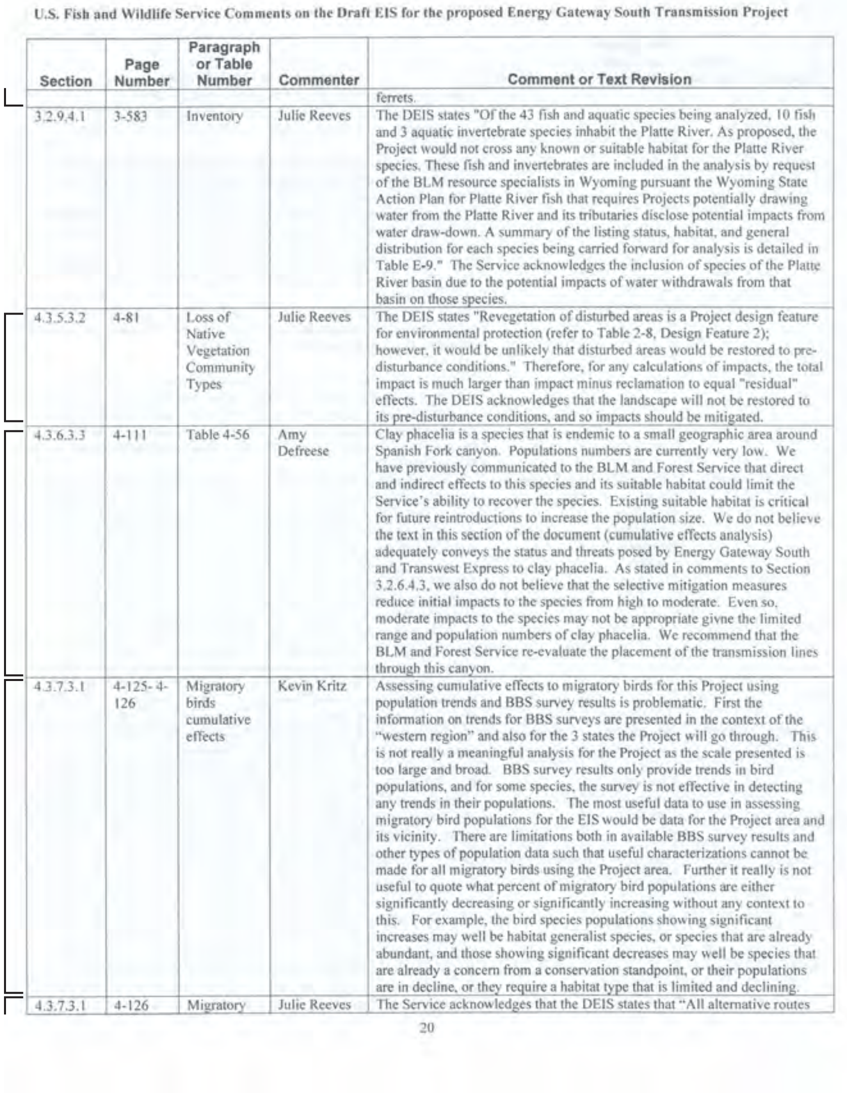
F2ei	Comment noted.
F2ej	Table 3-102 identifies design features and selective mitigation measures that will be applied if yellow-billed cuckoo habitat is confirmed to be present in the area. As recommended by FWS, measures that would be applied include Design Feature 3 (altering the placement of roads or towers), Selective Mitigation Measure 2 (no blading of new access roads in special status wildlife habitats), Selective Mitigation 4 (minimization of tree clearing), and Selective Mitigation Measure 7 (spanning or avoiding occupied habitats for special status wildlife species).
F2ek	Comment noted.
F2el	Comment noted.

Comment(s)

Response(s)

F2

U.S. Fish and Wildlife Service (cont.)



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2el					ferrets.
	3.2.9.4.1	3-583	Inventory	Julie Reeves	The DEIS states "Of the 43 fish and aquatic species being analyzed, 10 fish and 3 aquatic invertebrate species inhabit the Platte River. As proposed, the Project would not cross any known or suitable habitat for the Platte River species. These fish and invertebrates are included in the analysis by request of the BLM resource specialists in Wyoming pursuant the Wyoming State Action Plan for Platte River fish that requires Projects potentially drawing water from the Platte River and its tributaries disclose potential impacts from water draw-down. A summary of the listing status, habitat, and general distribution for each species being carried forward for analysis is detailed in Table E-9." The Service acknowledges the inclusion of species of the Platte River basin due to the potential impacts of water withdrawals from that basin on those species.
F2em	4.3.5.3.2	4-81	Loss of Native Vegetation Community Types	Julie Reeves	The DEIS states "Revegetation of disturbed areas is a Project design feature for environmental protection (refer to Table 2-8, Design Feature 2); however, it would be unlikely that disturbed areas would be restored to pre-disturbance conditions." Therefore, for any calculations of impacts, the total impact is much larger than impact minus reclamation to equal "residual" effects. The DEIS acknowledges that the landscape will not be restored to its pre-disturbance conditions, and so impacts should be mitigated.
F2en	4.3.6.3.3	4-111	Table 4-56	Amy Defreese	Clay phacelia is a species that is endemic to a small geographic area around Spanish Fork canyon. Populations numbers are currently very low. We have previously communicated to the BLM and Forest Service that direct and indirect effects to this species and its suitable habitat could limit the Service's ability to recover the species. Existing suitable habitat is critical for future reintroductions to increase the population size. We do not believe the text in this section of the document (cumulative effects analysis) adequately conveys the status and threats posed by Energy Gateway South and Transwest Express to clay phacelia. As stated in comments to Section 3.2.6.4.3, we also do not believe that the selective mitigation measures reduce initial impacts to the species from high to moderate. Even so, moderate impacts to the species may not be appropriate givne the limited range and population numbers of clay phacelia. We recommend that the BLM and Forest Service re-evaluate the placement of the transmission lines through this canyon.
F2eo	4.3.7.3.1	4-125- 4-126	Migratory birds cumulative effects	Kevin Kritz	Assessing cumulative effects to migratory birds for this Project using population trends and BBS survey results is problematic. First the information on trends for BBS surveys are presented in the context of the "western region" and also for the 3 states the Project will go through. This is not really a meaningful analysis for the Project as the scale presented is too large and broad. BBS survey results only provide trends in bird populations, and for some species, the survey is not effective in detecting any trends in their populations. The most useful data to use in assessing migratory bird populations for the EIS would be data for the Project area and its vicinity. There are limitations both in available BBS survey results and other types of population data such that useful characterizations cannot be made for all migratory birds using the Project area. Further it really is not useful to quote what percent of migratory bird populations are either significantly decreasing or significantly increasing without any context to this. For example, the bird species populations showing significant increases may well be habitat generalist species, or species that are already abundant, and those showing significant decreases may well be species that are already a concern from a conservation standpoint, or their populations are in decline, or they require a habitat type that is limited and declining.
F2ep	4.3.7.3.1	4-126	Migratory	Julie Reeves	The Service acknowledges that the DEIS states that "All alternative routes

F2em

Comment noted. In a NEPA context, residual impacts are the environmental effects that remain after selective mitigation measures have been applied, not the footprint of area that would not be reclaimed following disturbance. Calculations of acres of impacts presented in Chapter 3 are raw estimations of the extent of impacts (in acres) from Project activities and do not include any consideration of the extent of reclamation efforts. Under Design Feature 2, surface reclamation would occur in all areas where temporary ground disturbance or recontouring is required.

F2en

Comment noted. Cumulative effects analysis has been revised to exclude vegetation treatments from the list of past actions, which allows a more accurate disclosure of cumulative effects of transmission lines through this habitat. The recommendation for re-evaluation of the Project alternative route is noted. Impact criteria were developed in coordination with the Agency Interdisciplinary Team, including FWS representatives. Additional coordination with FWS will occur for clay phacelia during Section 7 consultation.

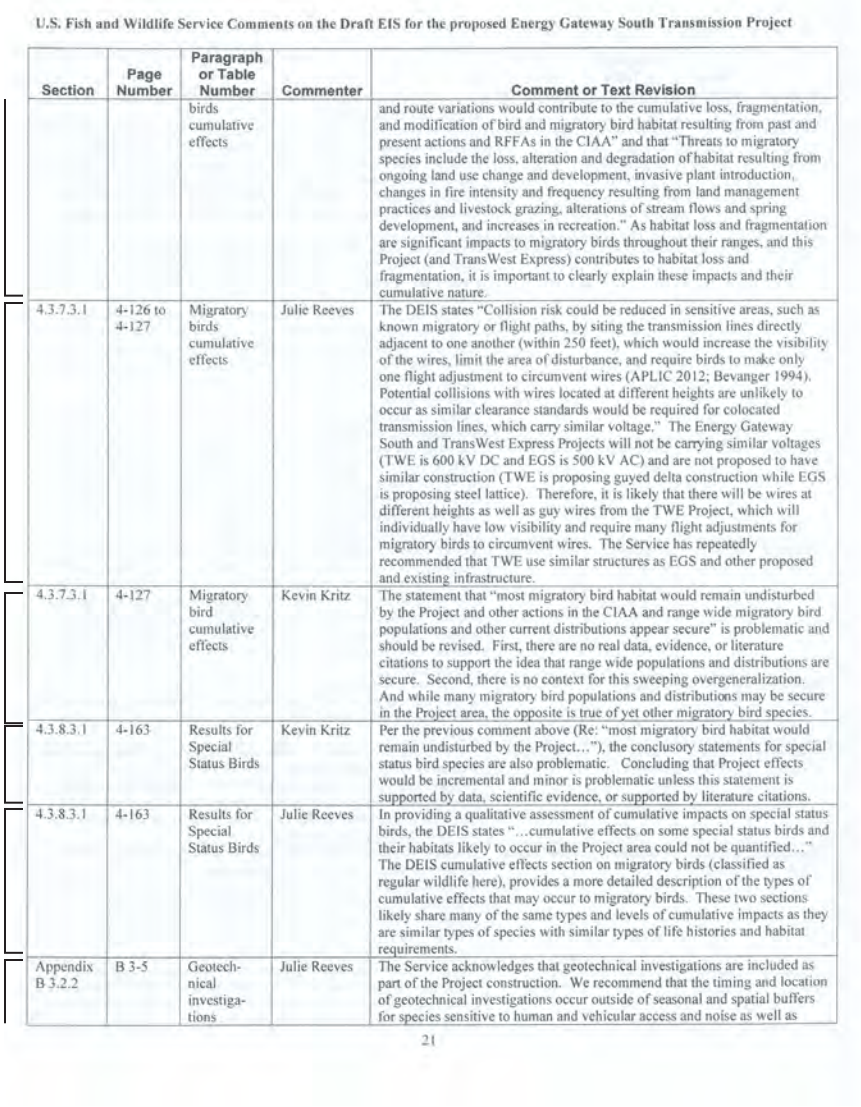
F2eo

See response to Comment F2bo.

Comment(s)

Response(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2ep			birds cumulative effects		and route variations would contribute to the cumulative loss, fragmentation, and modification of bird and migratory bird habitat resulting from past and present actions and RFFAs in the CIAA" and that "Threats to migratory species include the loss, alteration and degradation of habitat resulting from ongoing land use change and development, invasive plant introduction, changes in fire intensity and frequency resulting from land management practices and livestock grazing, alterations of stream flows and spring development, and increases in recreation." As habitat loss and fragmentation are significant impacts to migratory birds throughout their ranges, and this Project (and TransWest Express) contributes to habitat loss and fragmentation, it is important to clearly explain these impacts and their cumulative nature.
F2eq	4.3.7.3.1	4-126 to 4-127	Migratory birds cumulative effects	Julie Reeves	The DEIS states "Collision risk could be reduced in sensitive areas, such as known migratory or flight paths, by siting the transmission lines directly adjacent to one another (within 250 feet), which would increase the visibility of the wires, limit the area of disturbance, and require birds to make only one flight adjustment to circumvent wires (APLIC 2012; Bevanger 1994). Potential collisions with wires located at different heights are unlikely to occur as similar clearance standards would be required for colocated transmission lines, which carry similar voltage." The Energy Gateway South and TransWest Express Projects will not be carrying similar voltages (TWE is 600 kV DC and EGS is 500 kV AC) and are not proposed to have similar construction (TWE is proposing guyed delta construction while EGS is proposing steel lattice). Therefore, it is likely that there will be wires at different heights as well as guy wires from the TWE Project, which will individually have low visibility and require many flight adjustments for migratory birds to circumvent wires. The Service has repeatedly recommended that TWE use similar structures as EGS and other proposed and existing infrastructure.
F2er	4.3.7.3.1	4-127	Migratory bird cumulative effects	Kevin Kritz	The statement that "most migratory bird habitat would remain undisturbed by the Project and other actions in the CIAA and range wide migratory bird populations and other current distributions appear secure" is problematic and should be revised. First, there are no real data, evidence, or literature citations to support the idea that range wide populations and distributions are secure. Second, there is no context for this sweeping overgeneralization. And while many migratory bird populations and distributions may be secure in the Project area, the opposite is true of yet other migratory bird species.
F2es	4.3.8.3.1	4-163	Results for Special Status Birds	Kevin Kritz	Per the previous comment above (Re: "most migratory bird habitat would remain undisturbed by the Project…"), the conclusory statements for special status bird species are also problematic. Concluding that Project effects would be incremental and minor is problematic unless this statement is supported by data, scientific evidence, or supported by literature citations.
F2et	4.3.8.3.1	4-163	Results for Special Status Birds	Julie Reeves	In providing a qualitative assessment of cumulative impacts on special status birds, the DEIS states "…cumulative effects on some special status birds and their habitats likely to occur in the Project area could not be quantified…" The DEIS cumulative effects section on migratory birds (classified as regular wildlife here), provides a more detailed description of the types of cumulative effects that may occur to migratory birds. These two sections likely share many of the same types and levels of cumulative impacts as they are similar types of species with similar types of life histories and habitat requirements.
F2eu	Appendix B 3.2.2	B 3-5	Geotech-nical investiga-tions	Julie Reeves	The Service acknowledges that geotechnical investigations are included as part of the Project construction. We recommend that the timing and location of geotechnical investigations occur outside of seasonal and spatial buffers for species sensitive to human and vehicular access and noise as well as

21

F2ep See response to Comment F2bo.

F2eq Transmission line structure preference noted. Based on review of the project descriptions for the TransWest Express and Energy Gateway South transmission line projects, BLM has confirmed that similar span distances, structure heights, and conductor clearance standards are proposed for the two projects. BLM believes that particularly in areas where the two projects would be colocated, if applicable, it is reasonable to assume the wires would be at similar heights because site-specific design regarding span distances and heights are largely driven by terrain constraints. The text has been edited for clarity.

F2er See response to Comment F2bo.

F2es Text has been edited for clarity.

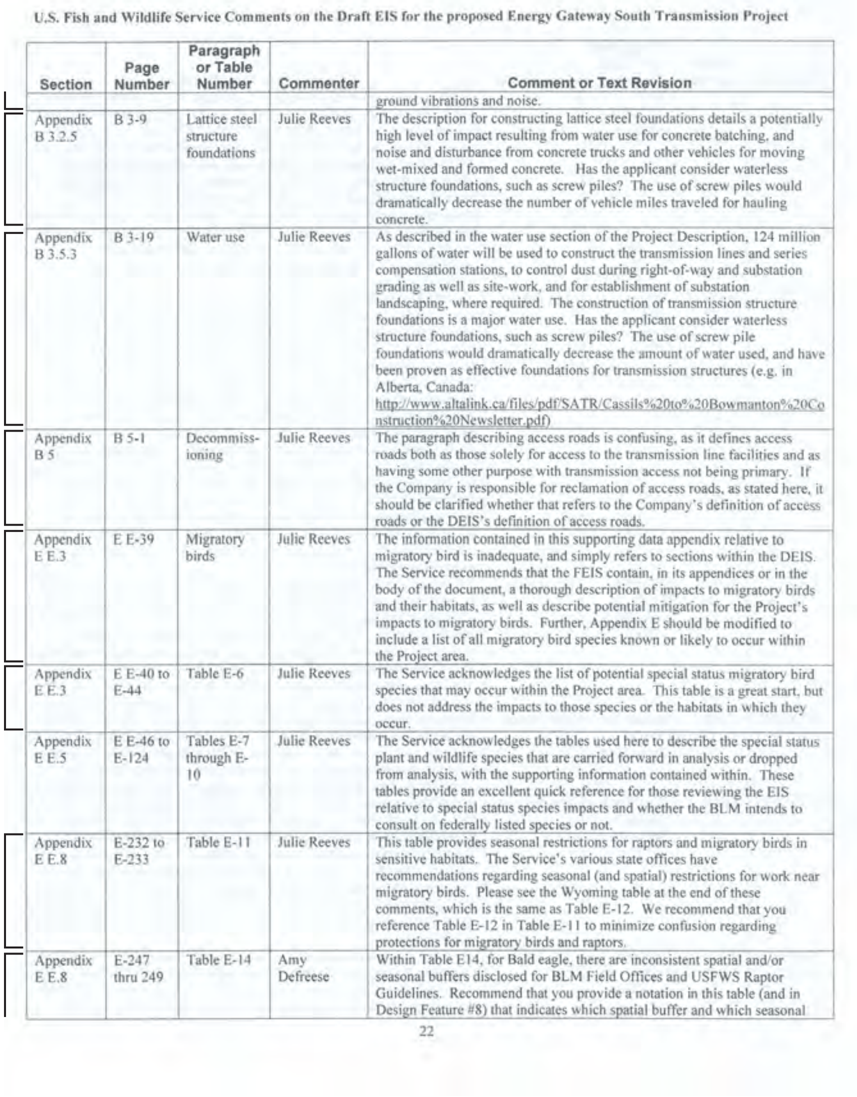
F2et The analysis for migratory birds was revised and expanded for the Final EIS.

F2eu Selective Mitigation Measure 12 (seasonal and spatial plant and wildlife restrictions; Table 2-13) restricts all construction and maintenance activities during sensitive periods. A list of seasonal wildlife restrictions are presented in Appendix J, Table J-12.

Comment(s)

Response(s)

F2 **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2eu					ground vibrations and noise.
F2ev	Appendix B 3.2.5	B 3-9	Lattice steel structure foundations	Julie Reeves	The description for constructing lattice steel foundations details a potentially high level of impact resulting from water use for concrete batching, and noise and disturbance from concrete trucks and other vehicles for moving wet-mixed and formed concrete. Has the applicant consider waterless structure foundations, such as screw piles? The use of screw piles would dramatically decrease the number of vehicle miles traveled for hauling concrete.
F2ew	Appendix B 3.5.3	B 3-19	Water use	Julie Reeves	As described in the water use section of the Project Description, 124 million gallons of water will be used to construct the transmission lines and series compensation stations, to control dust during right-of-way and substation grading as well as site-work, and for establishment of substation landscaping, where required. The construction of transmission structure foundations is a major water use. Has the applicant consider waterless structure foundations, such as screw piles? The use of screw pile foundations would dramatically decrease the amount of water used, and have been proven as effective foundations for transmission structures (e.g. in Alberta, Canada: http://www.altalink.ca/files/pdf/SATR/Cassils%20to%20Bowmanton%20Construction%20Newsletter.pdf)
F2ex	Appendix B 5	B 5-1	Decommiss-ioning	Julie Reeves	The paragraph describing access roads is confusing, as it defines access roads both as those solely for access to the transmission line facilities and as having some other purpose with transmission access not being primary. If the Company is responsible for reclamation of access roads, as stated here, it should be clarified whether that refers to the Company's definition of access roads or the DEIS's definition of access roads.
F2ey	Appendix E E.3	E E-39	Migratory birds	Julie Reeves	The information contained in this supporting data appendix relative to migratory bird is inadequate, and simply refers to sections within the DEIS. The Service recommends that the FEIS contain, in its appendices or in the body of the document, a thorough description of impacts to migratory birds and their habitats, as well as describe potential mitigation for the Project's impacts to migratory birds. Further, Appendix E should be modified to include a list of all migratory bird species known or likely to occur within the Project area.
F2ez	Appendix E E.3	E E-40 to E-44	Table E-6	Julie Reeves	The Service acknowledges the list of potential special status migratory bird species that may occur within the Project area. This table is a great start, but does not address the impacts to those species or the habitats in which they occur.
	Appendix E E.5	E E-46 to E-124	Tables E-7 through E-10	Julie Reeves	The Service acknowledges the tables used here to describe the special status plant and wildlife species that are carried forward in analysis or dropped from analysis, with the supporting information contained within. These tables provide an excellent quick reference for those reviewing the EIS relative to special status species impacts and whether the BLM intends to consult on federally listed species or not.
F2fa	Appendix E E.8	E-232 to E-233	Table E-11	Julie Reeves	This table provides seasonal restrictions for raptors and migratory birds in sensitive habitats. The Service's various state offices have recommendations regarding seasonal (and spatial) restrictions for work near migratory birds. Please see the Wyoming table at the end of these comments, which is the same as Table E-12. We recommend that you reference Table E-12 in Table E-11 to minimize confusion regarding protections for migratory birds and raptors.
F2fb	Appendix E E.8	E-247 thru 249	Table E-14	Amy Defreese	Within Table E14, for Bald eagle, there are inconsistent spatial and/or seasonal buffers disclosed for BLM Field Offices and USFWS Raptor Guidelines. Recommend that you provide a notation in this table (and in Design Feature #8) that indicates which spatial buffer and which seasonal

22

F2ev The potential for screw piles and other foundation types would be evaluated during final design. However, the amount of water required for drilled pier foundations is a relatively small portion compared to other activities, namely dust control. For example, a 4-foot diameter, 25-foot deep drilled pier foundation would only require approximately 350 gallons of water. As far as disturbance and vehicle traffic, this size of a foundation also would only require approximately two concrete truck loads. Additionally, steel screw piles would require substantially more operations and maintenance efforts, as the piles would need to be regularly visited and inspected for corrosion damage. This additional inspection requirement would add to future area disturbance compared to concrete drilled pier foundations.

F2ew See response to Comment F2ev.

F2ex Appendix B was provided by the Applicant and cannot be modified by the BLM. For clarity (and as described in Section 2.4.2.3 of the EIS), roads required for construction purposes only would be reclaimed according to the specific procedures in the POD. Other roads used for access to the transmission line that have other uses (e.g., county roads, private drives, etc.) would not be reclaimed during decommissioning.

F2ey See response to Comment F2bo.

F2ez See response to Comment F2bo.

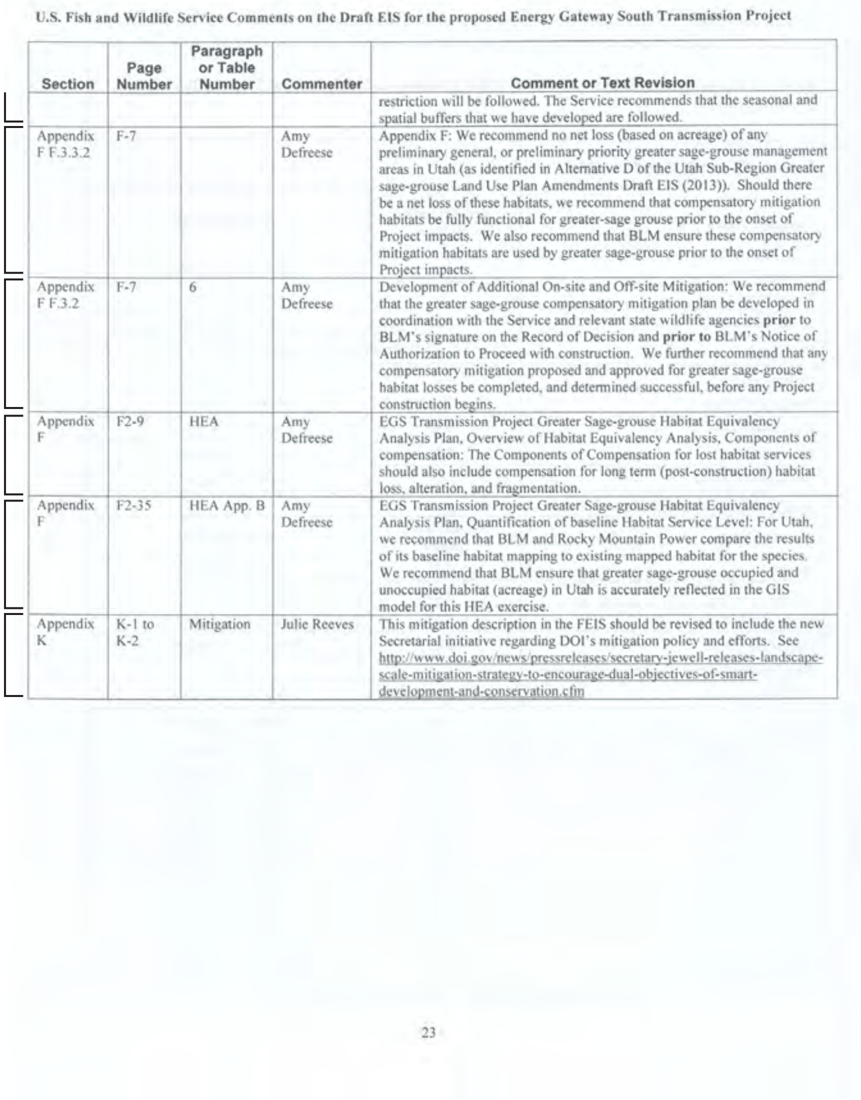
F2fa The recommended modification is reflected in Appendix J, Table J-11 of the Final EIS.

F2fb See response to Comment F2x.

Comment(s)

Response(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

	Section	Page Number	Paragraph or Table Number	Commenter	Comment or Text Revision
F2fb					restriction will be followed. The Service recommends that the seasonal and spatial buffers that we have developed are followed.
F2fc	Appendix F F.3.3.2	F-7		Amy Defreese	Appendix F: We recommend no net loss (based on acreage) of any preliminary general, or preliminary priority greater sage-grouse management areas in Utah (as identified in Alternative D of the Utah Sub-Region Greater sage-grouse Land Use Plan Amendments Draft EIS (2013)). Should there be a net loss of these habitats, we recommend that compensatory mitigation habitats be fully functional for greater-sage grouse prior to the onset of Project impacts. We also recommend that BLM ensure these compensatory mitigation habitats are used by greater sage-grouse prior to the onset of Project impacts.
F2fd	Appendix F F.3.2	F-7	6	Amy Defreese	Development of Additional On-site and Off-site Mitigation: We recommend that the greater sage-grouse compensatory mitigation plan be developed in coordination with the Service and relevant state wildlife agencies **prior** to BLM's signature on the Record of Decision and **prior to** BLM's Notice of Authorization to Proceed with construction. We further recommend that any compensatory mitigation proposed and approved for greater sage-grouse habitat losses be completed, and determined successful, before any Project construction begins.
F2fe	Appendix F	F2-9	HEA	Amy Defreese	EGS Transmission Project Greater Sage-grouse Habitat Equivalency Analysis Plan, Overview of Habitat Equivalency Analysis, Components of compensation: The Components of Compensation for lost habitat services should also include compensation for long term (post-construction) habitat loss, alteration, and fragmentation.
F2ff	Appendix F	F2-35	HEA App. B	Amy Defreese	EGS Transmission Project Greater Sage-grouse Habitat Equivalency Analysis Plan, Quantification of baseline Habitat Service Level: For Utah, we recommend that BLM and Rocky Mountain Power compare the results of its baseline habitat mapping to existing mapped habitat for the species. We recommend that BLM ensure that greater sage-grouse occupied and unoccupied habitat (acreage) in Utah is accurately reflected in the GIS model for this HEA exercise.
F2fg	Appendix K	K-1 to K-2	Mitigation	Julie Reeves	This mitigation description in the FEIS should be revised to include the new Secretarial initiative regarding DOI's mitigation policy and efforts. See http://www.doi.gov/news/pressreleases/secretary-jewell-releases-landscape-scale-mitigation-strategy-to-encourage-dual-objectives-of-smart-development-and-conservation.cfm

23

F2fc Comment and recommendations noted.

F2fd Comment and recommendation noted. The U.S Fish and Wildlife Service is participating in the Applicant's Habitat Equivalency Analysis Technical Working Group through which the Applicant's Sage-grouse Mitigation Plan is being developed.

F2fe Comment and recommendation noted. See response to comment F2fd.

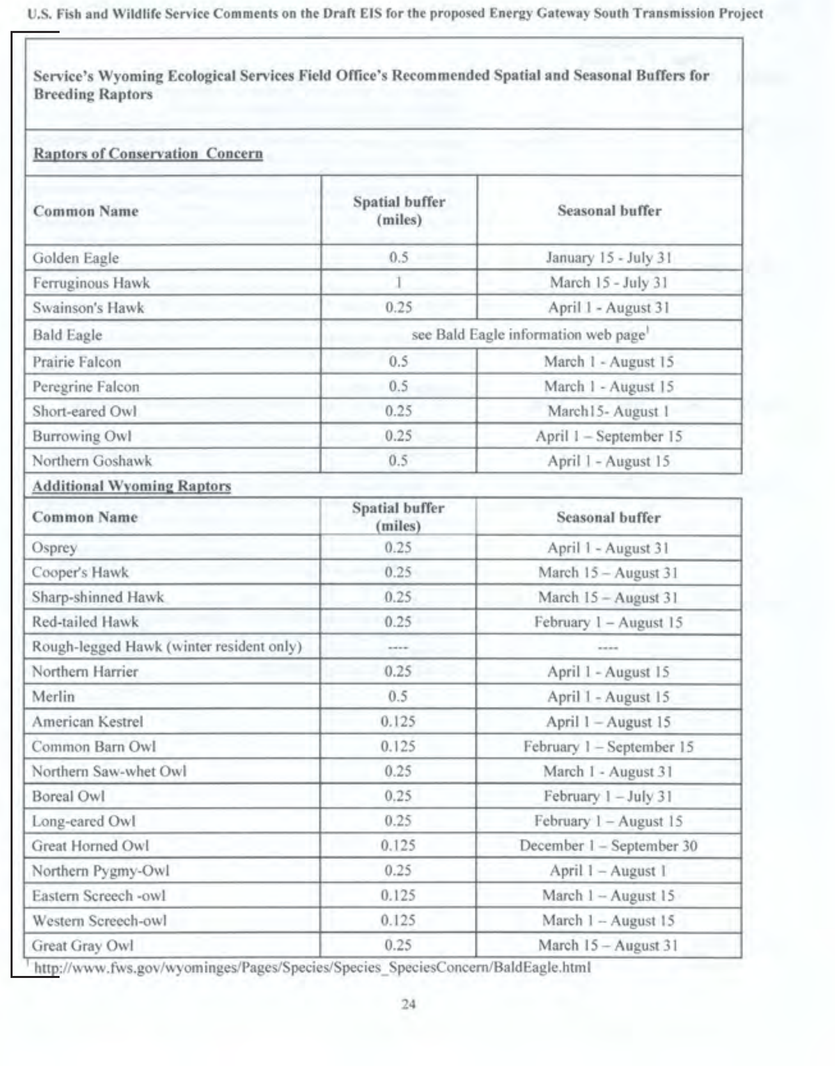
F2ff See response to Comment F2fe.

F2fg The BLM believes the intent of the Landscape-Scale Mitigation Strategy to Encourage Dual Objectives of Smart Development and Conservation is inherent in the design features and/or mitigation measures established for the Project. As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

Response continued on next page.

Comment(s)

F2 | **U.S. Fish and Wildlife Service (cont.)**



U.S. Fish and Wildlife Service Comments on the Draft EIS for the proposed Energy Gateway South Transmission Project

F2fh

Service's Wyoming Ecological Services Field Office's Recommended Spatial and Seasonal Buffers for Breeding Raptors

Raptors of Conservation Concern

Common Name	Spatial buffer (miles)	Seasonal buffer
Golden Eagle	0.5	January 15 - July 31
Ferruginous Hawk	1	March 15 - July 31
Swainson's Hawk	0.25	April 1 - August 31
Bald Eagle	see Bald Eagle information web page[1]	
Prairie Falcon	0.5	March 1 - August 15
Peregrine Falcon	0.5	March 1 - August 15
Short-eared Owl	0.25	March15- August 1
Burrowing Owl	0.25	April 1 – September 15
Northern Goshawk	0.5	April 1 - August 15

Additional Wyoming Raptors

Common Name	Spatial buffer (miles)	Seasonal buffer
Osprey	0.25	April 1 - August 31
Cooper's Hawk	0.25	March 15 – August 31
Sharp-shinned Hawk	0.25	March 15 – August 31
Red-tailed Hawk	0.25	February 1 – August 15
Rough-legged Hawk (winter resident only)	----	----
Northern Harrier	0.25	April 1 - August 15
Merlin	0.5	April 1 - August 15
American Kestrel	0.125	April 1 – August 15
Common Barn Owl	0.125	February 1 – September 15
Northern Saw-whet Owl	0.25	March 1 - August 31
Boreal Owl	0.25	February 1 – July 31
Long-eared Owl	0.25	February 1 – August 15
Great Horned Owl	0.125	December 1 – September 30
Northern Pygmy-Owl	0.25	April 1 – August 1
Eastern Screech -owl	0.125	March 1 – August 15
Western Screech-owl	0.125	March 1 – August 15
Great Gray Owl	0.25	March 15 – August 31

[1] http://www.fws.gov/wyominges/Pages/Species/Species_SpeciesConcern/BaldEagle.html

24

Response(s)

F2fg cont.

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation, to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

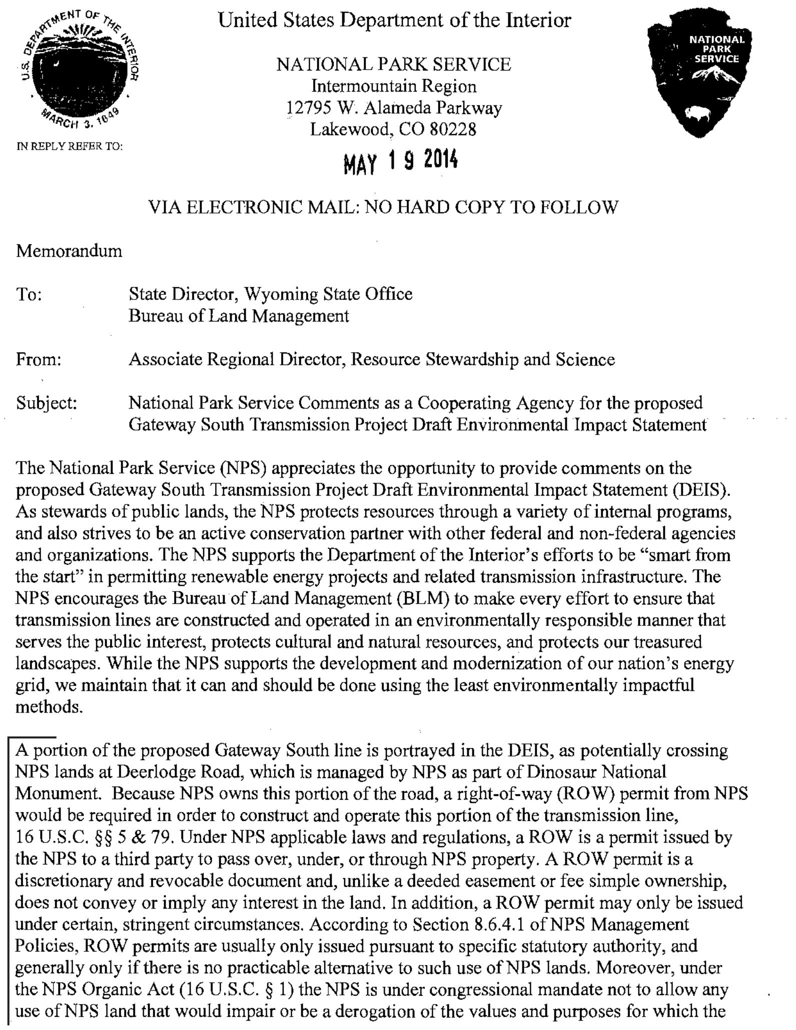
F2fh

This information is included in Table J-13, Appendix J of the Final EIS.

Comment(s)

Response(s)

F3 **National Park Service**



United States Department of the Interior

NATIONAL PARK SERVICE
Intermountain Region
12795 W. Alameda Parkway
Lakewood, CO 80228

IN REPLY REFER TO:

MAY 19 2014

VIA ELECTRONIC MAIL: NO HARD COPY TO FOLLOW

Memorandum

To: State Director, Wyoming State Office
Bureau of Land Management

From: Associate Regional Director, Resource Stewardship and Science

Subject: National Park Service Comments as a Cooperating Agency for the proposed Gateway South Transmission Project Draft Environmental Impact Statement

The National Park Service (NPS) appreciates the opportunity to provide comments on the proposed Gateway South Transmission Project Draft Environmental Impact Statement (DEIS). As stewards of public lands, the NPS protects resources through a variety of internal programs, and also strives to be an active conservation partner with other federal and non-federal agencies and organizations. The NPS supports the Department of the Interior's efforts to be "smart from the start" in permitting renewable energy projects and related transmission infrastructure. The NPS encourages the Bureau of Land Management (BLM) to make every effort to ensure that transmission lines are constructed and operated in an environmentally responsible manner that serves the public interest, protects cultural and natural resources, and protects our treasured landscapes. While the NPS supports the development and modernization of our nation's energy grid, we maintain that it can and should be done using the least environmentally impactful methods.

F3a

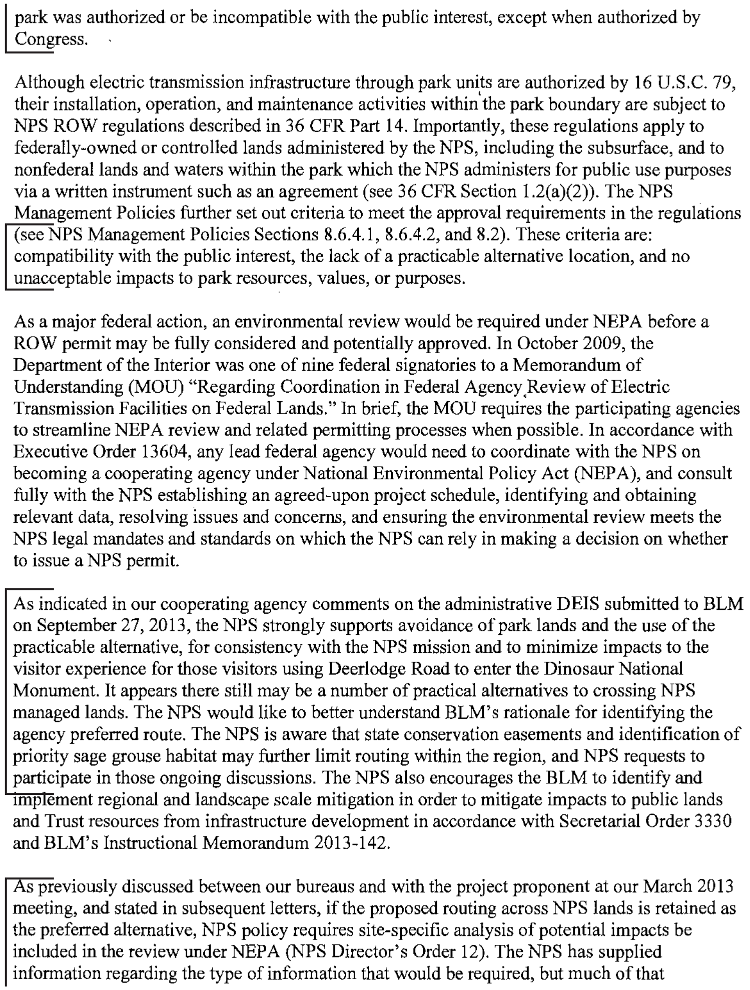
A portion of the proposed Gateway South line is portrayed in the DEIS, as potentially crossing NPS lands at Deerlodge Road, which is managed by NPS as part of Dinosaur National Monument. Because NPS owns this portion of the road, a right-of-way (ROW) permit from NPS would be required in order to construct and operate this portion of the transmission line, 16 U.S.C. §§ 5 & 79. Under NPS applicable laws and regulations, a ROW is a permit issued by the NPS to a third party to pass over, under, or through NPS property. A ROW permit is a discretionary and revocable document and, unlike a deeded easement or fee simple ownership, does not convey or imply any interest in the land. In addition, a ROW permit may only be issued under certain, stringent circumstances. According to Section 8.6.4.1 of NPS Management Policies, ROW permits are usually only issued pursuant to specific statutory authority, and generally only if there is no practicable alternative to such use of NPS lands. Moreover, under the NPS Organic Act (16 U.S.C. § 1) the NPS is under congressional mandate not to allow any use of NPS land that would impair or be a derogation of the values and purposes for which the

F3a

Comment noted. Additional analysis to support National Park Service (NPS) decision-making is included in Appendix G.

Comment(s)

F3 **National Park Service (cont.)**



F3a park was authorized or be incompatible with the public interest, except when authorized by Congress.

Although electric transmission infrastructure through park units are authorized by 16 U.S.C. 79, their installation, operation, and maintenance activities within the park boundary are subject to NPS ROW regulations described in 36 CFR Part 14. Importantly, these regulations apply to federally-owned or controlled lands administered by the NPS, including the subsurface, and to nonfederal lands and waters within the park which the NPS administers for public use purposes via a written instrument such as an agreement (see 36 CFR Section 1.2(a)(2)). The NPS Management Policies further set out criteria to meet the approval requirements in the regulations (F3b see NPS Management Policies Sections 8.6.4.1, 8.6.4.2, and 8.2). These criteria are: compatibility with the public interest, the lack of a practicable alternative location, and no unacceptable impacts to park resources, values, or purposes.

As a major federal action, an environmental review would be required under NEPA before a ROW permit may be fully considered and potentially approved. In October 2009, the Department of the Interior was one of nine federal signatories to a Memorandum of Understanding (MOU) "Regarding Coordination in Federal Agency Review of Electric Transmission Facilities on Federal Lands." In brief, the MOU requires the participating agencies to streamline NEPA review and related permitting processes when possible. In accordance with Executive Order 13604, any lead federal agency would need to coordinate with the NPS on becoming a cooperating agency under National Environmental Policy Act (NEPA), and consult fully with the NPS establishing an agreed-upon project schedule, identifying and obtaining relevant data, resolving issues and concerns, and ensuring the environmental review meets the NPS legal mandates and standards on which the NPS can rely in making a decision on whether to issue a NPS permit.

F3c As indicated in our cooperating agency comments on the administrative DEIS submitted to BLM on September 27, 2013, the NPS strongly supports avoidance of park lands and the use of the practicable alternative, for consistency with the NPS mission and to minimize impacts to the visitor experience for those visitors using Deerlodge Road to enter the Dinosaur National Monument. It appears there still may be a number of practical alternatives to crossing NPS managed lands. The NPS would like to better understand BLM's rationale for identifying the agency preferred route. The NPS is aware that state conservation easements and identification of priority sage grouse habitat may further limit routing within the region, and NPS requests to participate in those ongoing discussions. The NPS also encourages the BLM to identify and implement regional and landscape scale mitigation in order to mitigate impacts to public lands and Trust resources from infrastructure development in accordance with Secretarial Order 3330 and BLM's Instructional Memorandum 2013-142.

F3d As previously discussed between our bureaus and with the project proponent at our March 2013 meeting, and stated in subsequent letters, if the proposed routing across NPS lands is retained as the preferred alternative, NPS policy requires site-specific analysis of potential impacts be included in the review under NEPA (NPS Director's Order 12). The NPS has supplied information regarding the type of information that would be required, but much of that

Response(s)

F3b See response to Comment F3a.

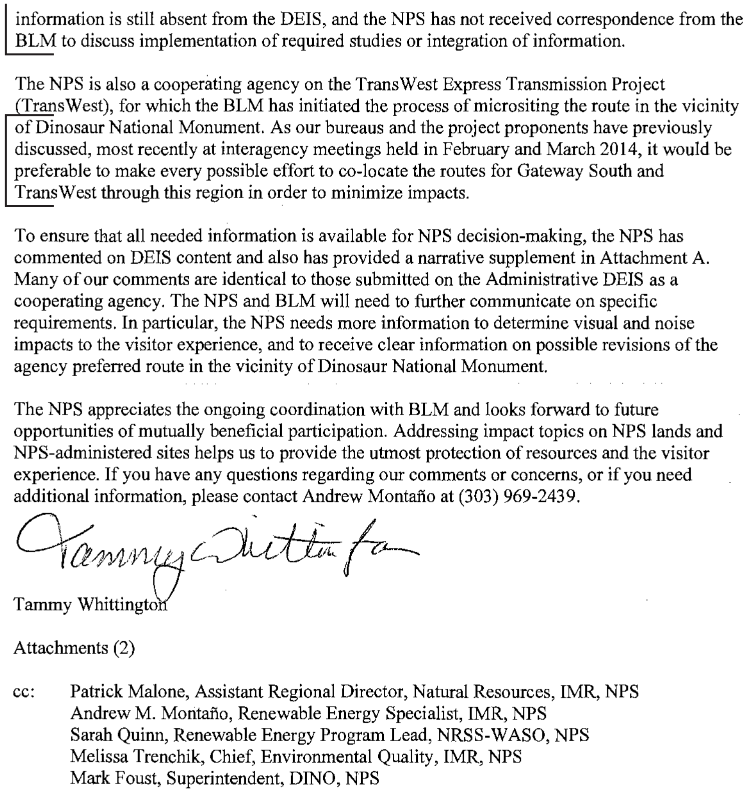
F3c See response to Comment F3a.

F3d See response to Comment F3a.

Comment(s)

Response(s)

F3 **National Park Service (cont.)**



F3d

information is still absent from the DEIS, and the NPS has not received correspondence from the BLM to discuss implementation of required studies or integration of information.

The NPS is also a cooperating agency on the TransWest Express Transmission Project (TransWest), for which the BLM has initiated the process of micrositing the route in the vicinity of Dinosaur National Monument. As our bureaus and the project proponents have previously discussed, most recently at interagency meetings held in February and March 2014, it would be preferable to make every possible effort to co-locate the routes for Gateway South and TransWest through this region in order to minimize impacts.

F3e

To ensure that all needed information is available for NPS decision-making, the NPS has commented on DEIS content and also has provided a narrative supplement in Attachment A. Many of our comments are identical to those submitted on the Administrative DEIS as a cooperating agency. The NPS and BLM will need to further communicate on specific requirements. In particular, the NPS needs more information to determine visual and noise impacts to the visitor experience, and to receive clear information on possible revisions of the agency preferred route in the vicinity of Dinosaur National Monument.

The NPS appreciates the ongoing coordination with BLM and looks forward to future opportunities of mutually beneficial participation. Addressing impact topics on NPS lands and NPS-administered sites helps us to provide the utmost protection of resources and the visitor experience. If you have any questions regarding our comments or concerns, or if you need additional information, please contact Andrew Montaño at (303) 969-2439.

Tammy Whittin for

Tammy Whittington

Attachments (2)

cc: Patrick Malone, Assistant Regional Director, Natural Resources, IMR, NPS
Andrew M. Montaño, Renewable Energy Specialist, IMR, NPS
Sarah Quinn, Renewable Energy Program Lead, NRSS-WASO, NPS
Melissa Trenchik, Chief, Environmental Quality, IMR, NPS
Mark Foust, Superintendent, DINO, NPS

F3e See response to Comment F3a.

Comment(s)

Response(s)

F3 National Park Service (cont.)

Energy Gateway South Transmission Line Project
Draft EIS Comment Form

Page	Section	Commenter	Comment
S-2 S-7 S-8 S-9 S-10 S-11 S-27 I-5 2-109 2-111 2-113 2-133 4-250	Route Variation	NPS-DINO	Instead of the BLM agency preferred alternative that crosses Deerlodge Road, a congressionally authorized portion of Dinosaur National Monument, the NPS supports the use of the state lands practicable alternative, or other practicable alternative nearby, for completion of transmission lines in this area. F3f: Law and policy dictate that electric transmission lines should avoid crossing units of the National Park System when at all practical. Under NPS applicable laws and regulations, a right-of-way (ROW) is a permit issued by the NPS to a third party to pass over, under, or through NPS property. A ROW permit is a discretionary and revocable document and, unlike a deeded easement or fee simple ownership, does not convey or imply any interest in the land. In addition, a ROW permit may only be issued under certain, stringent circumstances. According to Section 8.6.4.1 of NPS Management Policies, ROW permits are usually only issued pursuant to specific statutory authority, and generally only if there is no practicable alternative to such use of NPS lands. Moreover, under the NPS Organic Act (16 U.S.C. § 1) the NPS is under congressional mandate not to allow any use of NPS land that would impair or be a derogation of the values and purposes for which the park was authorized or be incompatible with the public interest, except when authorized by Congress. Use of NPS lands will require site-specific analyses in the EIS documents. To ensure that all needed information is available for NPS decision-making, NPS and BLM will need to further communicate on specific requirements. F3g: The Deerlodge Road is a congressionally authorized portion of Dinosaur National Monument. Throughout the document, it should be clear that the road is inside the Monument and is entitled to the same legal protections as other NPS lands. To ensure that the NPS ownership is understood by the public, the NPS suggests the language “the Deerlodge Road within Dinosaur National Monument” rather than “the Deerlodge Road entrance to Dinosaur National Monument.” F3h: Based on Dinosaur National Monument review, the alternative through the park is not consistent with the approved General Management Plan (GMP), Environmental Impact Statement (EIS), and Record of Decision for Dinosaur National Monument. The GMP lists industrial use of the park as an “incompatible use,” and also states that the purpose of the congressionally authorized scenic easements along the road corridor is to “protect the visual quality of the road.”
S-2 S-7 S-8 S-9 S-10 S-11 S-27 I-5 2-109 2-111 2-113 2-133 4-250	Various	NPS	F3i: When describing potential crossings of NPS lands and the associated ROW permit that would be required from the NPS, the DEIS should include the context from NPS Director’s Order #53, which directs that the NPS can only issue a ROW grant “only if there is no practicable alternative to such use of NPS lands.” This should be added whenever the crossing of the NPS lands is described in the DEIS.

National Park Service comments on the proposed Energy Gateway South Transmission Line Project DEIS
*Page **1** of **6***

F3f See response to Comment F3a.

F3g Comment noted. Additional analysis to support NPS decision-making is included in Appendix G.

F3h See response to Comment F3g.

F3i See response to Comment F3g.

Comment(s)

F3 | **National Park Service (cont.)**

Energy Gateway South Transmission Line Project
Draft EIS Comment Form

	Page	Section	Commenter	Comment
F3j	S-29 3-1010	Various	NPS	The NPS agrees with the BLM assessment that "Route Variations WYCO-B-2, WYCO-C-2, and WYCO-F-2 would highly affect views for a short period when entering the Dinosaur National Monument from the east entrance…" On page 3-1010, the DEIS states that, "Low impacts would occur on views from the Deerlodge Road entrance of Dinosaur National Monument, because the Project would be viewed in context with two existing transmission lines located closer to the national monument than the Project." Please consistently reflect the high impacts upon views from Dinosaur National Monument. See NPS comment below on Appendix H, Visual Simulations, for further explanation.
F3k	S-29 3-1010	Various	NPS-DINO	NPS agrees with the DEIS assessment in this section that several proposed route designations "would highly impact views from Dinosaur National Monument." The DEIS states that "Route Variations WYCO-B-2, WYCO-C-2, and WYCO-F-2 would highly affect views for a *short period* when entering the Dinosaur National Monument from the east entrance" (Emphasis added). NPS would like to understand what BLM's definition is of a "short period" and what analysis BLM used to determine that the views would be affected for a short period, and if the agency considered that the views for visitors stopped at the entrance kiosk and along the road might be impacted for a more than a short period. Occasionally in the document, the impact is described as low or moderate instead of high. Please consistently reflect the high impacts upon views from Dinosaur National Monument. See NPS comment below on Appendix H, Visual Simulations, for further explanation. This section analyzes compliance with federal agency visual management objectives for BLM and for USFS land-use plans, but not for NPS. In order to NPS to make a decision based on this document, analysis of the project's impact on Dinosaur National Monument's visual management objectives is needed.
F3l	S-27 3-838 3-840 other locations	Special Designations	NPS- DINO	The document does not adequately recognize the difference between Congressional designations and agency administrative designations. The document treats units of the National Park System, which are designated and protected under federal law for their national significance, in a fashion similar to local administrative designations such as State Parks and BLM Dispersed Recreation Areas. The NPS requests that the BLM acknowledge the differences and identify the appropriate protection mandates associated with units of the National Park System. The NPS suggests that the document separate areas of special congressional or federal designation, such as units of the National Park System and Wilderness, from other agency-level designations, and represent the higher level of protection provided to these units by congressional action, regulation, and policy.
F3m	3-1010		NPS-DINO	The NPS agrees with the BLM assessment in this section that several proposed route designations "would highly impact views from Dinosaur National Monument". Occasionally in the document, the impact is described as low or moderate instead. Please consistently reflect the high impacts upon views from Dinosaur National Monument.

National Park Service comments on the proposed Energy Gateway South Transmission Line Project DEIS
*Page **2** of **6***

Response(s)

F3j

The level of impact on views from Dinosaur National Monument varies based on the alignment of different alternative routes and route variations. Where views of the Project are unobstructed and dominated by the Project in a natural setting, high impacts have been assessed. In other locations, where the Project is located on the other side of two existing transmission lines and at a greater distance from the monument, the level of impact was assessed at a low level. An additional level of detail describing impacts on views from this portion of Dinosaur National Monument has been included in the NPS appendix (Appendix G).

F3k

This statement of short period was in reference to the perpendicular crossing of Deerlodge Road, which would be shorter in duration than paralleling the road for example. This reference to "short period" has been removed (as it is confusing) and does not reflect the duration of the view experienced by a visitor at the kiosk.

In regard to impact levels, see response to Comment F3j.

The visual management objectives contained in the Dinosaur National Monument plan have been added to support a potential NPS decision for allowing the Project to cross the monument.

F3l

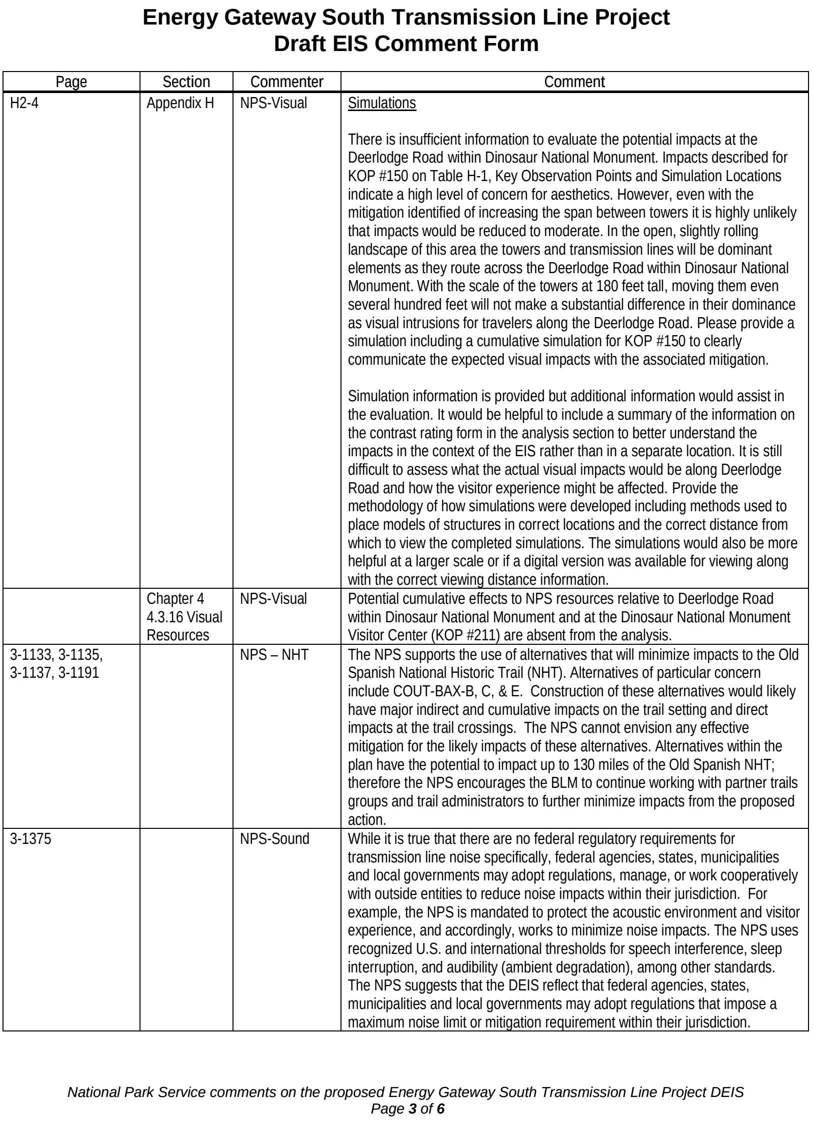
See response to Comment F3g.

F3m

See response to Comment F3j.

Comment(s)

F3 | **National Park Service (cont.)**



Energy Gateway South Transmission Line Project
Draft EIS Comment Form

	Page	Section	Commenter	Comment
F3n	H2-4	Appendix H	NPS-Visual	Simulations There is insufficient information to evaluate the potential impacts at the Deerlodge Road within Dinosaur National Monument. Impacts described for KOP #150 on Table H-1, Key Observation Points and Simulation Locations indicate a high level of concern for aesthetics. However, even with the mitigation identified of increasing the span between towers it is highly unlikely that impacts would be reduced to moderate. In the open, slightly rolling landscape of this area the towers and transmission lines will be dominant elements as they route across the Deerlodge Road within Dinosaur National Monument. With the scale of the towers at 180 feet tall, moving them even several hundred feet will not make a substantial difference in their dominance as visual intrusions for travelers along the Deerlodge Road. Please provide a simulation including a cumulative simulation for KOP #150 to clearly communicate the expected visual impacts with the associated mitigation. Simulation information is provided but additional information would assist in the evaluation. It would be helpful to include a summary of the information on the contrast rating form in the analysis section to better understand the impacts in the context of the EIS rather than in a separate location. It is still difficult to assess what the actual visual impacts would be along Deerlodge Road and how the visitor experience might be affected. Provide the methodology of how simulations were developed including methods used to place models of structures in correct locations and the correct distance from which to view the completed simulations. The simulations would also be more helpful at a larger scale or if a digital version was available for viewing along with the correct viewing distance information.
F3o		Chapter 4 4.3.16 Visual Resources	NPS-Visual	Potential cumulative effects to NPS resources relative to Deerlodge Road within Dinosaur National Monument and at the Dinosaur National Monument Visitor Center (KOP #211) are absent from the analysis.
F3p	3-1133, 3-1135, 3-1137, 3-1191		NPS – NHT	The NPS supports the use of alternatives that will minimize impacts to the Old Spanish National Historic Trail (NHT). Alternatives of particular concern include COUT-BAX-B, C, & E. Construction of these alternatives would likely have major indirect and cumulative impacts on the trail setting and direct impacts at the trail crossings. The NPS cannot envision any effective mitigation for the likely impacts of these alternatives. Alternatives within the plan have the potential to impact up to 130 miles of the Old Spanish NHT; therefore the NPS encourages the BLM to continue working with partner trails groups and trail administrators to further minimize impacts from the proposed action.
F3q	3-1375		NPS-Sound	While it is true that there are no federal regulatory requirements for transmission line noise specifically, federal agencies, states, municipalities and local governments may adopt regulations, manage, or work cooperatively with outside entities to reduce noise impacts within their jurisdiction. For example, the NPS is mandated to protect the acoustic environment and visitor experience, and accordingly, works to minimize noise impacts. The NPS uses recognized U.S. and international thresholds for speech interference, sleep interruption, and audibility (ambient degradation), among other standards. The NPS suggests that the DEIS reflect that federal agencies, states, municipalities and local governments may adopt regulations that impose a maximum noise limit or mitigation requirement within their jurisdiction.

National Park Service comments on the proposed Energy Gateway South Transmission Line Project DEIS
*Page **3** of **6***

Response(s)

F3n Due to the location where this alternative route crosses the Deerlodge Road, there are limited selective mitigation measures that could substantially decrease effects on views from the monument. To further illustrate these effects, a project effects and cumulative effects simulation have been added at Key Observation Point (KOP) #150.

For consistency, this information was kept in an appendix with the other contrast rating worksheets. In response to this and other NPS requests, an appendix has been added to the EIS that focuses on the routes in proximity to Dinosaur National Monument with additional narration.

The visual technical report contains a methodology describing how the simulations were prepared. A reference to this discussion has been added in appropriate locations in the EIS. Furthermore, additional viewing information has been included on the simulations as requested.

F3o See response to Comment F3n. Please note, a cumulative effects simulation and narration was included in the Draft EIS for KOP #211 at the Dinosaur National Monument Visitor Center.

F3p See response to Comment F3a.

F3q Comment noted. Additional analysis to support NPS decision-making is included in Appendix G.

Comment(s)

Response(s)

F3 | **National Park Service (cont.)**

Energy Gateway South Transmission Line Project
Draft EIS Comment Form

	Page	Section	Commenter	Comment
F3r	3-1371 to 3-1383		NPS-Sound	In general, the DEIS provides data on transmission line noise but is lacking in data on the affected environment, i.e. the ambient sound level in absence of transmission line noise or noise predictions at specific sensitive sites such as the visitor kiosk in Dinosaur National Monument near the intersection of U.S. 40 and the Deerlodge Road within Dinosaur National Monument. The DEIS also lacks estimates of transmission line noise under conditions of light precipitation (such as rain, fog, or snow), when increased humidity leads to louder transmission noise while the ambient sound level remains low. In order to better disclose the effect on the affected environment, the NPS requests more specific information on transmission line noise variation and the affected environment. For example, for assessment of noise from the agency-preferred alternative transmission line alignment that crosses 300 feet south of the Deerlodge Road visitor kiosk, it would be helpful if the transmission line noise levels could be calculated for L5 rain, L50 rain, and L90 rain (approximately 0.1 mm/hr, which would represent a quieter ambient condition). Available resources for transmission line noise level calculation include the Electric Power Research Institute (EPRI) AC Transmission Line Reference Book—200 kV and Above, Chapter 10, and the EPRI Transmission Line Workstation software. To improve the estimate of transmission line noise at greater distances, we recommend the EPRI formula (10.4-23a), which is believed to provide a better estimate of atmospheric sound absorption than the BPA formula (10.4-23b), up to an approximate distance of 800 meters.
F3s	3-1376	Table 3-309	NPS-Sound	Table 3-305 is potentially useful but difficult to interpret. Some further explanation could be useful. Using the correction factors in Table 3-305, it might be helpful to calculate and provide Leq, Ldn, and L50 foul at the proposed ROW edge for Section 1, 2, 3, and 4 as shown in Figures J-9, 10, 11, and 12, respectively.
F3t	3-602, 3-604 3-264 3-322, 3-323 3-361, 3-363 3-367-368 3-407 3-408 3-466 3-473, 3-477, 3-480 3-484, 3-485 3-488 3-571, 3-572 3-600 3-602 3-604 Appendix E	Various	NPS- Wildlife	The NPS reviewed the DEIS, Chapter 3 – The Affected Environment and Environmental Consequences, pertaining to aquatic and wildlife resources in the Dinosaur National Monument/Deerlodge Road Area and Tuttle Easement Area of the DEIS. Almost all of the discussions pertain to only the Tuttle Easement resources, not those on NPS-managed lands. Therefore, this analysis (DEIS) is inaccurate because it fails to address the impacts to NPS aquatic and wildlife (biological) resources pertaining the agency preferred alternative. Excerpts from all the pages listed to the left indicate that the Tuttle Easement is the focus for the discussion. The NPS urges the BLM to provide site-specific assessment of the impacts to resources relative to the Deerlodge Road within Dinosaur National Monument. NPS resources (such as wildlife, special status species, aquatics, vegetation, visuals, etc.), unlike those for BLM, USFS, State, and other ownerships are not specified, quantified, or otherwise analyzed in the DEIS. For example, specific acres and amounts of habitat for wildlife species addressed, nests for raptors, use areas, migrational corridors, etc. are not quantified or described for NPS resources as they are for other agencies. Likewise, the effects (direct and indirect) of both short and long-term effects of each alternative to each NPS resource are not addressed. In addition, a word search of "NPS", "Deerlodge Road" or other references to NPS biological resources in Appendix E – Biological Resources Supporting Data of the DEIS failed to yield any references or results. Unlike for the BLM and Forest Service, NPS resources are absent from this section of the DEIS.

National Park Service comments on the proposed Energy Gateway South Transmission Line Project DEIS
*Page **4** of **6***

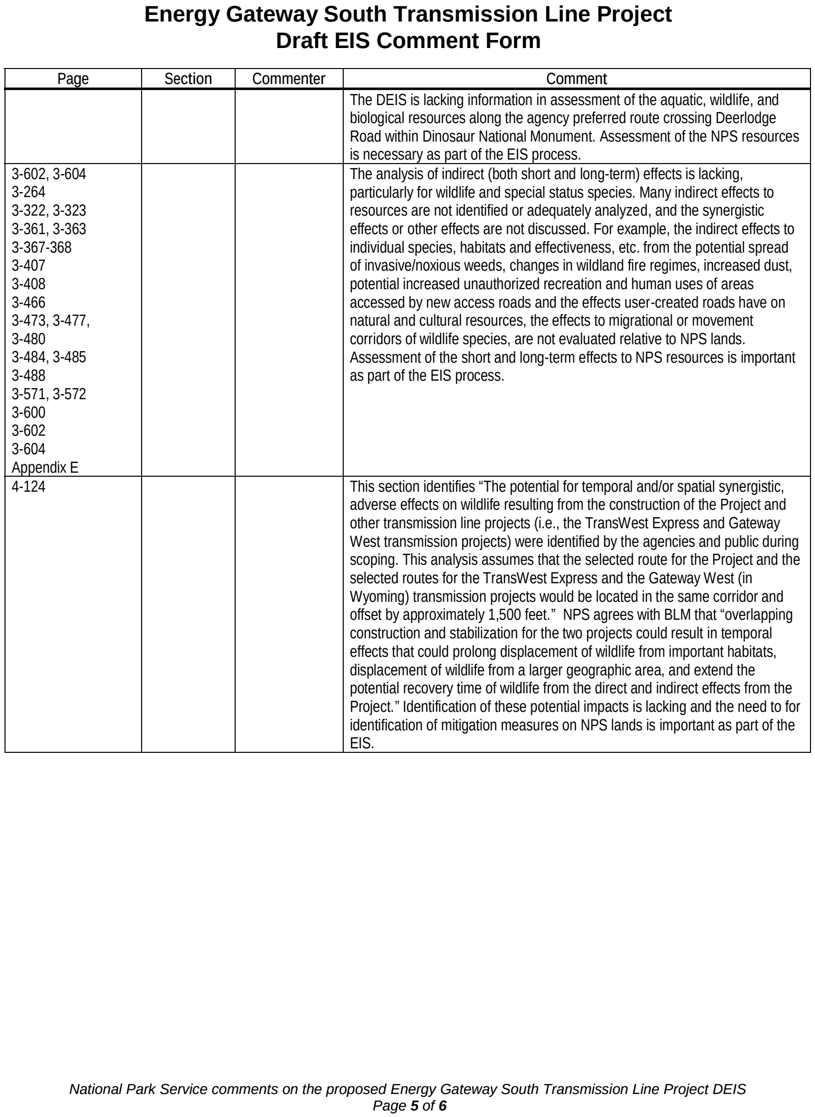
F3r See response to Comment F3q.

F3s See response to Comment F3q.

F3t See response to Comment F3a.

Comment(s)

F3 — **National Park Service (cont.)**



Energy Gateway South Transmission Line Project
Draft EIS Comment Form

	Page	Section	Commenter	Comment
F3t				The DEIS is lacking information in assessment of the aquatic, wildlife, and biological resources along the agency preferred route crossing Deerlodge Road within Dinosaur National Monument. Assessment of the NPS resources is necessary as part of the EIS process.
F3u	3-602, 3-604 3-264 3-322, 3-323 3-361, 3-363 3-367-368 3-407 3-408 3-466 3-473, 3-477, 3-480 3-484, 3-485 3-488 3-571, 3-572 3-600 3-602 3-604 Appendix E			The analysis of indirect (both short and long-term) effects is lacking, particularly for wildlife and special status species. Many indirect effects to resources are not identified or adequately analyzed, and the synergistic effects or other effects are not discussed. For example, the indirect effects to individual species, habitats and effectiveness, etc. from the potential spread of invasive/noxious weeds, changes in wildland fire regimes, increased dust, potential increased unauthorized recreation and human uses of areas accessed by new access roads and the effects user-created roads have on natural and cultural resources, the effects to migrational or movement corridors of wildlife species, are not evaluated relative to NPS lands. Assessment of the short and long-term effects to NPS resources is important as part of the EIS process.
F3v	4-124			This section identifies "The potential for temporal and/or spatial synergistic, adverse effects on wildlife resulting from the construction of the Project and other transmission line projects (i.e., the TransWest Express and Gateway West transmission projects) were identified by the agencies and public during scoping. This analysis assumes that the selected route for the Project and the selected routes for the TransWest Express and the Gateway West (in Wyoming) transmission projects would be located in the same corridor and offset by approximately 1,500 feet." NPS agrees with BLM that "overlapping construction and stabilization for the two projects could result in temporal effects that could prolong displacement of wildlife from important habitats, displacement of wildlife from a larger geographic area, and extend the potential recovery time of wildlife from the direct and indirect effects from the Project." Identification of these potential impacts is lacking and the need to for identification of mitigation measures on NPS lands is important as part of the EIS.

National Park Service comments on the proposed Energy Gateway South Transmission Line Project DEIS
*Page **5** of **6***

Response(s)

F3u See response to Comment F3a.

F3v Comment noted. Additional analysis to support NPS decision-making is included in Appendix G.

Comment(s)

Response(s)

F3 **National Park Service (cont.)**

Energy Gateway South Transmission Line Project Draft EIS Comment Form

Page	Section	Commenter	Comment
4-250			This section on cumulative effects on the Deerlodge Road within Dinosaur National Monument minimizes the potential impacts to NPS resources. Although the crossing at Deerlodge Road within Dinosaur National Monument may be less than 1 percent of the Project, potential impacts must be assessed for the area as it pertains to the management of the park unit. As stated previously, under the NPS Organic Act (16 U.S.C. § 1) the NPS is under congressional mandate not to allow any use of NPS land that would impair or be a derogation of the values and purposes for which the park was authorized or be incompatible with the public interest, except when authorized by Congress. Use of NPS lands will require site-specific analyses in the EIS documents. To ensure that all needed information is available for NPS decision-making, NPS and BLM will need to further communicate on specific requirements. F3w BLM states that the Project would span the site (Deerlodge Road), so no permanent infrastructure would affect the site. However, the effects of habitat disruption, visual and night sky impairment, and noise from tower infrastructure may have long-term cumulative impacts and need to be evaluated as part of the EIS process. F3x BLM also states that the reasonably foreseeable future actions (RFFAs), is the proposed TransWest Express Transmission Project for Deerlodge Road. As of late February, 2014, BLM indicated an agency preferred route for TransWest Express Transmission Project across the Tuttle Easement and not across Deerlodge Road within Dinosaur National Monument. NPS suggests clarification of location and assessment of the cumulative impacts relative to the proposed siting of the TransWest Express Transmission Project relative to the Gateway South Project. F3y This section also states that "Cumulative effects for Deerlodge Road are also discussed in Section 4.3.16." There is no further discussion regarding Deerlodge Road within Dinosaur National Monument in Section 4.3.16. The NPS suggest that the BLM assess the cumulative effects to Deerlodge Road within Dinosaur National Monument and evaluate more fully the impacts to NPS lands. It is the NPS's position that the use of the state lands practicable alternative, or other practicable alternative nearby, for completion of transmission lines in this area.
BA (Pending)		NPS-Wildlife	F3z Biological Assessment for Federally Listed Species Given the absence in the DEIS of the assessment of the aquatic, wildlife, and biological resources along the agency preferred route crossing Deerlodge Road within Dinosaur National Monument, the NPS encourages the BLM to include these assessments in the Biological Assessment (BA). In 2013, the NPS signed a MOU with BLM as the lead agency regarding submission, review, and use of a BA for this project on NPS lands. Federally listed and NPS SOC species occurring on NPS-managed lands must be identified and any impacts from these actions properly assessed in the BA as per our MOU and as a cooperating agency.
Appendix F			F3aa Applicable "design features" and mitigation measures designed to avoid and minimize impacts on resources should also include resources on NPS managed lands and adjacent affected areas.

National Park Service comments on the proposed Energy Gateway South Transmission Line Project DEIS
*Page **6** of **6***

F3w See response to Comment F3g.

F3x See response to Comment F3a.

F3y See response to Comment F3g.

F3z See response to Comment F3v.

F3aa See response to Comment F3q.

Comment(s)	Response(s)

F3 **National Park Service (cont.)**

Attachment A – NPS Site-Specific Analysis Requirements for Transmission Projects

Comment Scope:

F3ab A portion of the proposed Gateway South line is portrayed in the DEIS, as potentially crossing NPS lands at Deerlodge Road, which is managed by NPS as part of Dinosaur National Monument. Because NPS owns this portion of the road, a right-of-way (ROW) permit from NPS would be required in order to construct and operate this portion of the transmission line. 16 U.S.C. §§ 5 & 79. As a major federal action, an environmental review would be required under the National Environmental Policy Act (NEPA) before a ROW permit may be fully considered and potentially approved. The comments below focus solely on the potential direct, indirect, and cumulative impacts of crossing NPS lands and do not address concerns the NPS may have with the sufficiency of the NEPA analysis for the other alternatives adjacent to Dinosaur National Monument, although some of our comments may reasonably extend to these other alternatives for certain impact topics. The NPS provided comments related to a potential transmission line crossing of Dinosaur National Monument in its previous internal comments on the administrative Draft Environmental Impact Statement on September 27, 2013.

F3ab See response to Comment F3a.

F3ac NPS Director's Order 12 Handbook 7.2(A) requires the NPS to evaluate the *site-specific* impacts of an implementation plan prior to making a decision. Therefore, the NPS cannot issue a ROW permit until a site-specific analysis on NPS lands is complete; this could be accomplished through a site-specific analysis meeting the NPS standards included in the BLM-led NEPA documents, which is preferable under the October 2009 DOI MOU, "Regarding Coordination in Federal Agency Review of Electric Transmission Facilities on Federal Lands," or in a separate NEPA analysis undertaken by the NPS. Currently, NPS lands and potential impacts of the transmission line on Dinosaur National Monument are only briefly addressed in the BLM-led document, generally in summary tables, and are not analyzed at the site-specific level. The comments below address the level of detail the NPS would need in the EIS to evaluate issuing a ROW permit. This analysis should include site-specific details, and include short and long-term, direct and indirect impacts, context, and intensity, following Council on Environmental Quality (CEQ) significance criteria at 40 CFR 1508.27.

F3ac See response to Comment F3a.

F3ad With regards to the NPS ability to adopt the BLM's EIS and use it as a basis on which the NPS issues a decision, the NPS may adopt the EIS without recirculating it "after an independent review of the statement, the cooperating agency concludes that its comments have been satisfied." 40 CFR 1506.3(c). Accordingly, the NPS requests an opportunity to ensure that all comments submitted are satisfied such that the NPS may adopt the EIS without recirculation.

The NPS is required to make a finding of non-impairment before issuing a ROW permit; the NPS would need an advance copy of the administrative draft Final EIS in order to make a non-impairment determination, with a final written determination accompanying a NPS-issued Record of Decision (ROD).

F3ad See response to Comment F3a.

General comments:

F3ae The NPS resources (such as wildlife, special status species, aquatics, vegetation, visuals, etc.), unlike those for the BLM, U.S. Forest Service, the State, and other ownerships, are not currently

F3ae See response to Comment F3a.

	Comment(s)		Response(s)
F3	**National Park Service (cont.)**		
F3ae	specified, quantified, or otherwise analyzed in the DEIS. For example, specific acres and amounts of habitat for wildlife species addressed, nests for raptors, use areas, wildlife migration corridors, etc. are not quantified or described for NPS resources as they are for other agencies. Likewise, the effects (direct and indirect) of both short and long-term effects of each alternative to each NPS resource should be addressed.		
F3af	The DEIS fails to address what specific biological resources are present and the extent of potential impact on NPS lands at Dinosaur National Monument. Transmission line segments in the alternatives crossing NPS lands are referred to in only a very general sense, if at all. The level of impacts to NPS lands and affected aquatic and wildlife resources are not identified separately or addressed. Although the agency preferred crossing at Deerlodge Road on NPS lands covers a substantially smaller area compared to BLM and National Forestlands, impacts to NPS resources must still be addressed. Conversely, a very detailed analysis of effects to BLM and USFS aquatic and wildlife resources (including species of concern) is provided in the DEIS. There is some mention in the DEIS of effects of the alternatives at the Deerlodge Road and Dinosaur National Monument specific to Climate and Air Quality Resources in the *Affected Environment and Environmental Consequences* (Chapter 3) on pages 3-26, 3-45, 3-47, 3-49. Additional evaluation of potential impacts to site-specific NPS resources is required to fully inform the DEIS.	F3af	See response to Comment F3a.
F3ag	The DEIS repeatedly cites and refers to the April 26, 2013, Colorado Parks and Wildlife (CPW) letter regarding the Tuttle Easement, describing species use, populations, and habitat conditions in the Tuttle Easement Area. Virtually no mention or discussion of the Deerlodge Road or NPS wildlife/aquatic resources, species presence or habitat conditions or potential effects from these actions are included in the DEIS. Equal weight and attention is not given to biological resources on both sides of Highway 40. Throughout chapter 3 of the DEIS, almost all of the discussions pertain to only the Tuttle Easement resources, not those on NPS-managed lands. Therefore, this analysis is inaccurate because it fails to address the impacts to NPS aquatic and wildlife (biological) resources pertaining to the agency preferred alternative.	F3ag	See response to Comment F3v.
	Specific comments on Chapter 3 impacts analysis per impact topic:		
F3ah	**Viewsheds:** The analysis should incorporate effects to the NPS visual resources into the visual analysis using the BLM's Visual Resource Management (VRM) system. The analysis should include a visibility analysis/viewshed study to identify areas on NPS lands with potential visibility of the project. The analysis should also include the items outlined below with enough description and detail necessary for the NPS to make an informed decision.	F3ah	As part of the NPS appendix (Appendix G), detailing additional analysis associated with Dinosaur National Monument, a viewshed analysis was conducted to compare the visibility of different alternative routes and route variations within the monument.
F3ai	Provide photos and describe existing visual setting of NPS lands, including the entry kiosk and traveling along the entry road to and from Deerlodge Park. Include description of topography/landform, vegetation, and other characteristics to provide viewer experience along the NPS roadway.	F3ai	An additional level of detail describing impacts on views from this portion of Dinosaur National Monument has been included in the NPS appendix (Appendix G).
F3aj	Provide detailed description of how construction activities, including access, equipment locations, restoration and other activities will avoid NPS lands. Short duration construction detours and/or road closures may increase road signage and create traffic congestion, which	F3aj	See response to Comment F3ai.

Comment(s)		Response(s)	
F3	**National Park Service (cont.)**		
F3aj	would adversely impact general scenic quality in the vicinity of the Deerlodge access road. In general, construction-related impacts would be most acute where the activity is visible in the foreground to middle ground, between 0.25 and 2 miles away.		
F3ak	Describe changes to the existing landscape based on the current VRM inventory for the BLM White River Field Office. Discuss changes in landform and vegetation and the extent to which changes occur in areas visible from NPS lands.	F3ak	See response to Comment F3ai.
F3al	Include description of the change in the visitor experience of entering, leaving Dinosaur National Monument and using interpretive services at the entry kiosk. In the cumulative analysis section, please include the description of the change in visitor experience with two additional transmission lines on the corridor parallel to TransWest Express.	F3al	See response to Comment F3ai.
F3am	Provide contrast ratings and simulations of transmission line from Key Observation Points (KOPs), which the NPS can provide. KOPs are preliminary and based on the best assessment of location by remote methods. A contractor must verify visibility of proposed project from KOPs and provide final KOP locations to the NPS for approval prior to preparing simulations. It would be helpful to include a summary of the information on the contrast rating form in the analysis section to better understand the impacts in the context of the EIS rather than in a separate location. It is still difficult to assess what the actual visual impacts would be along Deerlodge Road and how the visitor experience might be affected. A visual simulation and additional discussion as previously requested would help in understanding impacts to NPS resources. Contrast rating process should include analysis of changes to existing landscape character elements (form, line, color, texture). Simulations should include visible changes in vegetation for ROW clearing and access roads that would be visible from NPS lands, as well as the tower structures and conductors of the project. Provide detailed information on preparation methodology for simulations, including proper viewing distance of simulations based on media (viewing on screen, printed at specific scale). Include short term and long term impacts to the extent possible.	F3am	Based on discussions with the NPS, additional KOPs have been added along Deerlodge Road with simulations depicting Project effects and cumulative effects on views. To keep Chapter 3 from becoming more voluminous, the contrast rating worksheets were located in a separate appendix. An additional level of detail describing impacts on views from this portion of Dinosaur National Monument has been included in the additional analysis requested by NPS (Appendix G).
F3an	Indicate consistency with VRM objectives of current Resource Management Plan (RMP) for the BLM lands immediately adjacent to NPS lands and identify what mitigation measures are included in the analysis to determine if compliance with VRM objectives. If VRM objectives are not met on adjacent the BLM lands, indicate if additional mitigation will be required or if an amendment to the VRM objective will be required.	F3an	The Final EIS documents whether the Project would be compliant with Visual Resource Management (VRM) Class objectives (refer to Section 3.2.18.5.4). In addition, this information is explicitly detailed for the area adjacent to Deerlodge Road in Appendix G.
F3ao	Potential cumulative effects to NPS resources at Deerlodge Road and at the Dinosaur National Monument Visitor Center are absent from the analysis and should be included.	F3ao	See response to Comment F3o.
F3ap	**Acoustic Environment:** The sole source of information for Dinosaur National Monument and for the Yampa River at Deerlodge Road is an outdoor kiosk, where visitors park, exit their cars, and remain outdoors while obtaining park information. Additional noise from the agency-preferred alternative transmission line alignment that crosses 300 feet south of the kiosk could	F3ap	See response to Comment F3q.

	Comment(s)		Response(s)
F3	**National Park Service (cont.)**		
F3ap	impact the visitor experience at this location, in addition to potential impacts to wildlife and the acoustic environment along the predominantly quiet Deerlodge Road corridor.		
F3aq	While it is true that there are no federal regulatory requirements for transmission line noise specifically, federal agencies, states, municipalities and local governments may adopt regulations, manage, or work cooperatively with outside entities to reduce noise impacts within their jurisdiction. For example, the NPS is mandated to protect the acoustic environment and visitor experience and works to minimize noise impacts. The NPS uses recognized U.S. and international thresholds for speech interference, sleep interruption, and audibility (ambient degradation), among other standards. The NPS suggests that the DEIS reflect that federal agencies, states, municipalities and local governments may adopt regulations that impose a maximum noise limit or mitigation requirement within their jurisdiction.	F3aq	See response to Comment F3q.
F3ar	Corona noise from high voltage transmission lines can exceed 50 decibels, particularly under conditions of light rain when the ambient sound level remains much lower. Noise at this level could impact the acoustic environment of the predominantly quiet Deerlodge Road corridor. Therefore, the corona noise discussion in the EIS should consider all noise sensitive receptors that could be impacted by the noise – including park resources – within the corridor. To estimate high voltage transmission line (HVTL) noise impacts on NPS-managed lands, transmission line noise audibility should be assessed based on best available practices and in consideration of park resources being noise-sensitive resources. Transmission line noise levels should be calculated based on the expected site conditions, such as transmission line voltage, conductor characteristics (including line geometry, conductor diameter, and surface conditions), site altitude, and any other relevant parameters. The chosen parameters should be disclosed in the impact assessment. Available resources for transmission line noise level calculation include the Electric Power Research Institute (EPRI) AC Transmission Line Reference Book - 200-kV and Above, Chapter 10, and the EPRI Transmission Line Workstation software.	F3ar	See response to Comment F3q.
F3as	**Wildlife:** Potential species for which there could be short and possible long-term impacts can be found at the following Colorado Parks and Wildlife website, almost all of which occur at Dinosaur National Monument: http://wildlife.state.co.us/SiteCollectionDocuments/DOW/WildlifeSpecies/Sagebrush/CHAPTER5speciesofconcern.pdf. The analysis of direct and indirect effects (both short and long-term) is lacking in the DEIS, particularly for the above mentioned wildlife and special status species that occur on NPS lands. The impacts to individual animals, not just population levels, should be analyzed. These effects to resources are not identified or adequately analyzed and the synergistic effects of other effects are not discussed as well. For example, the indirect effects to individual species, habitats and effectiveness, etc. from the potential spread of invasive/noxious weeds, changes in wildland fire regimes, increased dust, potential increased unauthorized recreation and human uses of areas accessed by new access roads and the effects user-created roads have on resources, the effects to migration or movement corridors of wildlife species, etc. should be discussed in site-specific detail. The NPS requests that the BLM identify, in consultation with the NPS, any species surveys needed to properly address these effects based on the species list above. NPS also requests that mitigation measures currently included in the DEIS (Appendix C, etc.) be specifically incorporated here.	F3as	See response to Comment F3v.

4

	Comment(s)		Response(s)
F3	**National Park Service (cont.)**		
F3at	**Migratory birds:** Please address regional effects of transmission lines on migratory bird species. There is concern that effects on these populations may extend beyond the ROW to the main body of Dinosaur National Monument. The NPS requests that the BLM identify, in consultation with the NPS, any species surveys needed to properly address these effects based on the species list above.	F3at	See response to Comment F3v.
F3au	**Sensitive species, including threatened and endangered:** The NPS requests involvement in Endangered Species Act Section 7 consultation, including input and review of the Biological Assessment and Biological Opinion. The NPS will need to approve restoration plans for areas disturbed during construction that would impact NPS lands, and specific measures for impact minimization, which are related to issuance of a NPS ROW. Note the NPS Management Policies - Section 4.4.2.3 requires the NPS to manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. Bald and Golden Eagles cross the area of proposed construction to use riparian habitat, and may require additional consultation under the Bald and Golden Eagle Protection Act. The NPS requests that the BLM identify, in consultation with the NPS, any species surveys needed to properly address these effects based on the species list above.	F3au	See response to Comment F3v.
F3av	**Wetlands and Floodplains:** Please address whether the agency preferred alternative would affect floodplain or wetland development on or near NPS lands. NPS Director's Orders 77-1 and 77-2 require avoidance of direct or indirect support of floodplain or wetland development whenever there is a practical alternative, and wetlands and floodplains delineations must be published to provide opportunity for public review and comment. A statement of findings is required for any actions with the potential to adversely affect wetlands or floodplains.	F3av	Comment noted. Additional analysis to support NPS decision-making is included in Appendix G. Surveys for wetlands and other waters would be completed in all areas with the potential to be impacted by the Project, and water resources would be avoided to the extent practicable under Design Feature 9. Any impacts on water resources would require authorization by the U.S. Army Corps of Engineers under Section 404 of the CWA.
F3aw	**Geologic Resources:** Applicable "design features" and mitigation measures designed to avoid and minimize impacts on resources must include NPS resources on NPS managed lands and adjacent affected areas. The NPS assumes that all construction and future maintenance will occur off park lands, however, the NPS recommends best management practices (BMPs) be developed that specify project site road access construction and long term power line and road maintenance requirements.	F3aw	See response to Comment F3q.
	The BMP's below are proposed for use as a condition of permitting and should be included in the DEIS for meaningful public analysis and comment:		
F3ax	Road construction: Access roads associated with construction site access will be constructed to provide a to-be-determined (TBD)-foot wide driving surface with TBD-foot shoulders on each side. Construction equipment will stay within the TBD-foot access road and tower site footprints. Any deviation from the TBD-foot road footprint will be coordinated with and approved by the land manager prior to disturbance. Access roads will be constructed by mechanically removing vegetation and grading native soils. Land managers and the project proponent will assess the need for road surfacing (including aggregate) and drainage structures for each proposed tower site and associated roads to prevent unacceptable impacts to roads, drainages, and adjacent areas. Drainage structures may include but are not limited to: ditches, culverts, and low water crossings. Road surfacing and drainage structures will be implemented as needed. Construction of access roads will result in TBD acres of permanent impacts, and new	F3ax	See response to Comment F3q.

Comment(s)

F3 **National Park Service (cont.)**

F3ax road construction associated with proposed tower site construction will permanently impact TBD acres. Road construction activities will include removing vegetation from the proposed road footprint, scarifying the proposed road surface, blending aggregate, grading, and compacting. The uphill shoulder of the road will be delineated with sediment waddles and a soil binder will be applied to the finished road surface.

F3ay Road maintenance: The project proponent will implement a comprehensive maintenance and repair program for all roads and authorized travel corridors associated with proposed project that are required to ensure full-time access to the towers and other project infrastructure. Specific maintenance requirements and schedules for each road and authorized corridors will be developed between the project proponent and the land manager. Maintenance may be performed by contractors or by the land manager as deemed appropriate between the project proponent and land manager. For the proposed project, it is anticipated that maintenance activities of authorized roads and the authorized corridor may occur up to TBD times per year or as necessary. In addition to the authorized road and corridor segments constructed, repaired, and improved as part of the proposed action, the project proponent will maintain additional lengths of authorized roads and an authorized corridor to provide access to the tower sites for maintenance purposes. It is anticipated that maintenance of authorized roads and the authorized corridor could include grading within the existing road or corridor alignment to maintain the condition of the road or corridor surface for tower and other project infrastructure maintenance access. At the land manager's discretion, additional aggregate or a soil stabilizer such as TBD may be used to improve the driving surface of maintained authorized roads or corridor. Maintenance actions will include necessary erosion control associated with the roads and authorized corridor. Road maintenance activities will be conducted outside the breeding and rearing season of wildlife species of conservation concern to the extent practicable. Specific cases (i.e., road impassable) where road or corridor maintenance is required during the breeding and rearing season of wildlife species of conservation concern to allow maintenance to a specific project site, such activities will be coordinated with and require approval from the land manager and U.S. Fish and Wildlife Service as appropriate. If a significant upgrade in road or authorized corridor condition is required, the project proponent will ensure all environmental compliance requirements are met before the work is conducted.

F3az **Vegetation and Invasive Species:** Please incorporate the BMPs identified in the Dinosaur National Monument Invasive Plant Management Plan/Environmental Assessment (EA), Appendix D.

F3ba **Air Quality:** During construction, air quality may be affected by dust. Short-term impacts will include equipment and ground disturbance effects. Longer-term effects are possible if wind erosion continues on poorly reclaimed land with bare ground. Please describe site specific air quality mitigation measures and identify monitoring techniques to ensure that fugitive dust does not exceed applicable standards.

F3bb **Water Quality:** The proposed project, if implemented, will cross the Little Snake and Yampa Rivers and their tributaries upstream of Dinosaur National Monument. The NPS strives to maintain the high water quality of the Yampa, which is the last naturally flowing river in the Colorado River system. These rivers support habitat for multiple federally listed fish species, and

Response(s)

F3ay See response to Comments F3q and F3bf.

F3az Comment noted. Additional analysis to support NPS decision-making is included in Appendix G.

F3ba Additional clarification of mitigation of potential air quality impacts is presented in Sections 3.2.1.4.1 and 3.2.1.4.2.

The following dust control measures will be applied across the Project:

- Watering at least twice daily in all disturbed areas undergoing active construction or disturbance.
- Watering all unpaved roads at least twice daily in areas of active use.
- Application of dust suppressants, if warranted, to unpaved roads and other disturbed areas (i.e., when generation of dust is observed despite application of other control measures, such as speed control and watering).
- Limitation of speeds on unpaved roads to 20 miles per hour.
- Sweeping up tracked-out dirt where unpaved roads or disturbed areas meet paved roads every 14 days, using PM10 efficient street sweepers, in areas of active construction or use.

Additional mitigation measures will be applied in accordance with dust control plans or permits issued or approved by the various air quality control jurisdictions. Colorado Regulations 1 (Section III.D) and 3 (Parts A and B) require a permit and dust control plan for any land development activities exceeding 25 acres or 6 months duration. The plan will specify control measures for disturbed areas, unpaved roads, and carryout onto paved roads. Colorado Regulation 1 also specifies the use of available, practical methods of dust control for construction activities, storage and handling of materials, haul trucks, blasting, and haul roads. Recommended mitigation measures are listed in Regulation 1, Section III.D.2.a through i.

Utah Regulation R307-205 established minimum work practices and emission standards for fugitive dust for all portions of Utah traversed by the alternative routes and route variations except Utah County. Activities regulated include storage and handling of materials, construction activities, and roads. Recommended mitigation measures are specified in Section R307-205-5 and R307-205-6.

Response continued on next page.

F3bb See next page for response to F3bb.

Comment(s)

Response(s) - continued

F3 **National Park Service (cont.)**

F3ba cont.

Utah Regulation R307-309 establishes minimum work practices and emission standards that would apply in Utah County. Recommended mitigation measures are specified in R307-309-6. A fugitive dust control plan will be required that will detail the mitigation measures to be used.

Wyoming air quality standards and regulations (WAQSR) Chapter 3 specified dust control measures to be used during construction activities and handling and transport of materials.

A POD will be prepared for the Project that will specify how compliance with mitigation measures will be monitored.

F3bb

Design features and selective mitigation measures to be implemented for protection of water resources are described in Section 3.2.4. Additionally, a Stormwater Pollution Prevention Plan Framework and a Stream, Wetland, Well, and Spring Protection Plan would be developed for inclusion in the POD.

Comment(s)		Response(s)	
F3	**National Park Service (cont.)**		
F3bb	the section of the Yampa between the mouth of Cross Mountain and Deerlodge is critical habitat for two endangered species. The NPS requests that BMPs be developed to protect water quality within these river systems during both the construction and maintenance phases of the proposed project.		
F3bc	**Recreation values / visitor experience:** Whitewater rafting in Dinosaur National Monument is the second most popular visitor activity, surpassed only by visitation at the Quarry Visitor Center. Visitors and rafters stop at the intersection of Highway 40 and Deerlodge Road at the orientation kiosk to gather information on camping, rafting, or general park information. More information is needed (identified below) to understand the impacts that this proposal and the cumulative impacts of three high voltage transmission lines would have on visitor experience/orientation into this park entrance. This discussion should also include the seasonality of impacts with relation to potential construction activities during the peak season of May through mid-July. Please provide a general discussion regarding NPS lands. The NPS staff can assist in the development of this material. Please include a discussion of Dinosaur National Monument as a potentially impacted recreation resource.	F3bc	See response to Comment F3g.
F3bd	**General Construction Impacts to Recreation**. Please provide a discussion on construction impacts likely to affect any park road crossing, and identify the following: 1) when construction would occur; 2) whether visitors would experience delays; 3) if road closures, as required, will prevent river permit holders from accessing the river; and 4) the long term impacts associated with construction and how the BLM or developer would mitigate these impacts. Construction should avoid spring/summer boating season (May, June, mid-July) if road closures occur.	F3bd	See response to Comment F3g.
F3be	**Land use:** The NPS requests that the BLM specifically address 40 CFR 1508.27(b)(3) – Unique characteristics of the geographic area such as proximity to park lands, and 40 CFR 1508.27(b)6). The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration, specifically, the precedent setting nature of locating new transmission facilities of this size and contrast on NPS lands, in determining whether the proposal would have significant impacts. Facilitating private infrastructure expansion would be contrary to the NPS practice and principle of protecting and improving park resources, including removing incompatible infrastructure. This could establish a precedent that may invite similar proposals by other applicants in the future, and create an expectation of like treatment for those proposals (i.e., it may make it difficult to deny such proposals). Installing the Gateway South line on this alignment will invite future utilities proposing to follow the same route, including the TransWest Express and possibly the Zephyr electric transmission project lines. The DEIS should address the "no practical alternative" standard required for issuing a ROW permit.	F3be	Comment noted. Additional analysis to support NPS decision-making is included in Appendix G.
F3bf	The NPS requests that the DEIS address long-term maintenance and clarify that no maintenance activities would occur within the NPS right of way.	F3bf	Maintenance activities are described in Section 2.4.7. A general assumption made in the analysis assumes that any jurisdictional requirements associated with another agency's permitting and approval will be accommodated by the Applicant in a manner acceptable to that agency. Any special requirements for or exclusions of maintenance activities can be identified in the POD, to be developed in coordination with cooperating agencies, including the NPS, when a route is selected. Also, if the selected route crosses the Deerlodge Road entrance to the Dinosaur National Monument, such requirements could be included as conditions of the right-of-way grant offered by the NPS.

Comment(s)

F3

National Park Service (cont.)

F3bg

Cultural resources: Section 106 of the National Historic Preservation Act requires federal agencies to determine if an undertaking affects or has the potential to affect properties listed in and eligible for listing in the National Register of Historic Places (NR). There is currently no cultural resource inventory for the area of potential effect. A cultural resource inventory within the Area of Potential Effect (APE) should be designed to identify 100% of the historic properties that could be directly or indirectly affected by the design, construction, operation, and maintenance of the proposed transmission line and corridor, including: archaeological properties, historic era properties, traditional cultural properties (TCPs), sacred sites, and paleontological sites and locales. The only known cultural resource is the Deerlodge Road, which may be eligible for listing in the NR. Consultation with tribes should be conducted to identify sensitive areas in the APE (primarily sacred sites and TCPs) and those areas that may be indirectly affected but located outside the APE. Historic properties and sacred sites identified will require mitigation measures in order to avoid, negate, or reduce adverse effects, if an adverse effect is found. A signed Memorandum of Agreement or Programmatic Agreement would be required prior to initiation of construction, if an adverse effect is found.

F3bh

Tribal consultation: In various places within the document, it sometimes reads Ute Mountain Tribe and other times Ute Mountain Ute Tribe. For consistency and to avoid confusion, one version should be used in the DEIS. On pages S-39 and 6-9, the document says the Confederated Tribes of the Goshute Reservation deferred to the Ute Indian Tribe of the Uintah and Ouray Reservation. Please consider asking the Confederated Tribes of the Goshute Reservation if the level of participation from the Ute Indian Tribe of the Uintah and Ouray Reservation is adequate to address Goshute's concerns.

F3bi

This project comes near Dinosaur National Monument, and the National Park Service's list of tribes traditionally associated with the park includes those you list as well as the Comanche Nation, Oklahoma, Crow Tribe of Montana, and San Juan Southern Paiute of Arizona. They may not be interested in this project, but you may want to provide them with an opportunity to comment on the document.

F3bj

Page 6-6 reads, "For efficiency, government-to-government consultation activities often are combined with Section 106 tribal consultation activities." If BLM and Forest Service consulted on other topics in addition to National Historic Preservation Act Section 106, the NPS suggests listing the topics covered in the consultations.

F3bk

The NPS suggests adding the Religious Freedom Restoration Act of 1993 to your list on page 6-7. It seems applicable with regard to this project, especially if sacred sites or landscapes are impacted.

F3bl

Cumulative impacts: Dinosaur National Monument cumulative effects are only mentioned in a summary table and one paragraph in Section 4.3.13.3.1. The NPS requests more detail (physical and temporal boundary descriptions) at the local/regional level to understand how the impacts of this proposal would combine with other past, present, and foreseeable future projects and activities relevant to the park resources. There are a number of projects within the park as well as near park boundaries that have both additive and synergistic effects on a number of important resources. The park can assist with providing a list of actions within park boundaries, and

Response(s)

F3bg

A Class III intensive pedestrian inventory (survey) was not conducted for the purposes of the EIS. If the Project is approved, intensive surveys will be conducted for the selected route and associated roads, substations, and ancillary facilities only. These surveys will be consistent with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 Federal Register 44716).

A Programmatic Agreement is being prepared and will be completed prior to the execution of the BLM and USFS decisions. Consulting parties and American Indian tribes have been included in the preparation and review of the draft Programmatic Agreement and their participation is ongoing.

If the Deerlodge Road alternative route is selected (WYCO alternative routes and route variations) it will be subject to Class III intensive pedestrian inventory (survey). All cultural resources sites would be documented and evaluated for eligibility for the National Register of Historic Places at that time. Although the Deerlodge Road occurs in the Project area, this historic linear site does not appear in the Class I literature search for the prescribed area. The Colorado State Historic Preservation Office (SHPO) was consulted for resource location and site status on July 9, 2014. EPG was informed that a Smithsonian site number has not been requested for or assigned to the Deerlodge Road to date (GIS Specialist Colorado SHPO, personal communication with Naia George, 2014).

Based on the coordination occurring with NPS after publication of the Draft EIS, an additional Class I file search for the Deerlodge Road area was completed as part of the alternative route comparisons included in Appendix G.

F3bh

Edited as requested. For consistency, the document now reads: "Ute Mountain Ute Tribe" and "Ute Mountain Ute Reservation."

As discussed in Chapter 6, the Confederated Tribes of the Goshute Indian Reservations deferred to the Ute Indian Tribe of the Uintah and Ouray Reservation (Northern Ute) in an email message on March 9, 2012. The Tribe stated that "the project is primarily within the Northern Ute aboriginal roaming area" and they deferred to the Northern Ute. In deferring to the Northern Ute, the Confederated Tribes of the Goshute Indian Reservations have declined further participation.

F3bi

See next page for response to F3bi.

F3bj

See next page for response to F3bj.

F3bk

See next page for response to F3bk.

Comment(s)

Response(s) - continued

F3 **National Park Service (cont.)**

F3bi In the early stages of Project initiation, the BLM (in consultation with other federal and state agencies) identified 33 tribes as having a traditional association with the study area. In 2011, BLM initiated consultation efforts with those tribes and invited them to participate in the Project. NPS has reviewed previous drafts of the EIS and draft Programmatic Agreement listing the identified tribes; NPS has not previously commented on the list of American Indian tribes. BLM does not include the Comanche Tribe (Oklahoma) or the Crow Tribe (Montana) in consultation for the area currently under study. The San Juan Southern Paiute of Arizona is included in the list of 33 tribes contacted during consultation efforts for the Project. After multiple unsuccessful attempts to contact the tribe, BLM requested assistance from the Bureau of Indian Affairs. The tribe did not respond to any of the multiple consultation requests for the Project.

F3bj Government-to-government and tribal consultation efforts have largely focused on the introduction of the Project as a whole and the participation of American Indian tribes in the Section 106 Process. Tribes have largely been unresponsive to attempts at government-to-government consultation. A recent meeting with the Northern Ute Business Council (August 4, 2014) included a brief description of the overall Project, discussion of two alternative routes through northern Utah, Section 7 Consultation, socioeconomic concerns, and routing issues associated with the Uintah Basin hookless cactus and threatened and endangered plants.

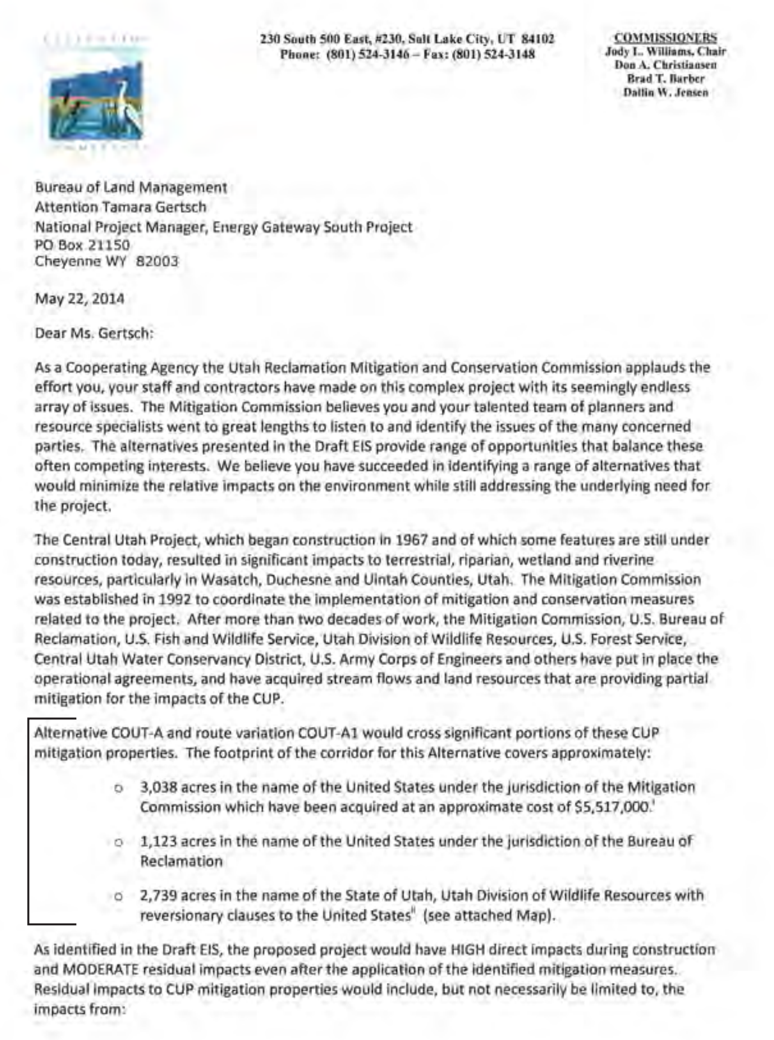
F3bk The Religious Freedom Restoration Act of 1993 has been added as recommended.

Comment(s)	Response(s)
F3 **National Park Service (cont.)**	
F3bl identify those projects/actions outside park boundaries that would contribute to a meaningful analysis of cumulative effects. Current projects include but are not limited to the Deerlodge Road Rehabilitation EA, River Riprapping EA, oil and gas development leases and associated extraction activity, and particularly the additional proposed electric transmission lines (TransWest Express).	F3bl See response to Comment F3a.
F3bm **Next steps:** Effective analysis of several topic areas above will require ongoing cooperation and detailed information from the NPS. The NPS recommends establishment of regular working group meetings and document review among the BLM, the EIS contractor, and the relevant NPS resource specialists to clarify the NPS needs and to supply information. Please contact Andrew Montaño at andrew_montano@nps.gov or at (303) 969-2439 with questions.	F3bm See response to Comment F3a.

9

Comment(s)

F4 **Utah Reclamation Mitigation and Conservation Commission**



230 South 500 East, #230, Salt Lake City, UT 84102
Phone: (801) 524-3146 – Fax: (801) 524-3148

COMMISSIONERS
Jody L. Williams, Chair
Don A. Christiansen
Brad T. Barber
Dallin W. Jensen

Bureau of Land Management
Attention Tamara Gertsch
National Project Manager, Energy Gateway South Project
PO Box 21150
Cheyenne WY 82003

May 22, 2014

Dear Ms. Gertsch:

As a Cooperating Agency the Utah Reclamation Mitigation and Conservation Commission applauds the effort you, your staff and contractors have made on this complex project with its seemingly endless array of issues. The Mitigation Commission believes you and your talented team of planners and resource specialists went to great lengths to listen to and identify the issues of the many concerned parties. The alternatives presented in the Draft EIS provide range of opportunities that balance these often competing interests. We believe you have succeeded in identifying a range of alternatives that would minimize the relative impacts on the environment while still addressing the underlying need for the project.

The Central Utah Project, which began construction in 1967 and of which some features are still under construction today, resulted in significant impacts to terrestrial, riparian, wetland and riverine resources, particularly in Wasatch, Duchesne and Uintah Counties, Utah. The Mitigation Commission was established in 1992 to coordinate the implementation of mitigation and conservation measures related to the project. After more than two decades of work, the Mitigation Commission, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Utah Division of Wildlife Resources, U.S. Forest Service, Central Utah Water Conservancy District, U.S. Army Corps of Engineers and others have put in place the operational agreements, and have acquired stream flows and land resources that are providing partial mitigation for the impacts of the CUP.

F4a

Alternative COUT-A and route variation COUT-A1 would cross significant portions of these CUP mitigation properties. The footprint of the corridor for this Alternative covers approximately:

- 3,038 acres in the name of the United States under the jurisdiction of the Mitigation Commission which have been acquired at an approximate cost of $5,517,000.[i]
- 1,123 acres in the name of the United States under the jurisdiction of the Bureau of Reclamation
- 2,739 acres in the name of the State of Utah, Utah Division of Wildlife Resources with reversionary clauses to the United States[ii] (see attached Map).

As identified in the Draft EIS, the proposed project would have HIGH direct impacts during construction and MODERATE residual impacts even after the application of the identified mitigation measures. Residual impacts to CUP mitigation properties would include, but not necessarily be limited to, the impacts from:

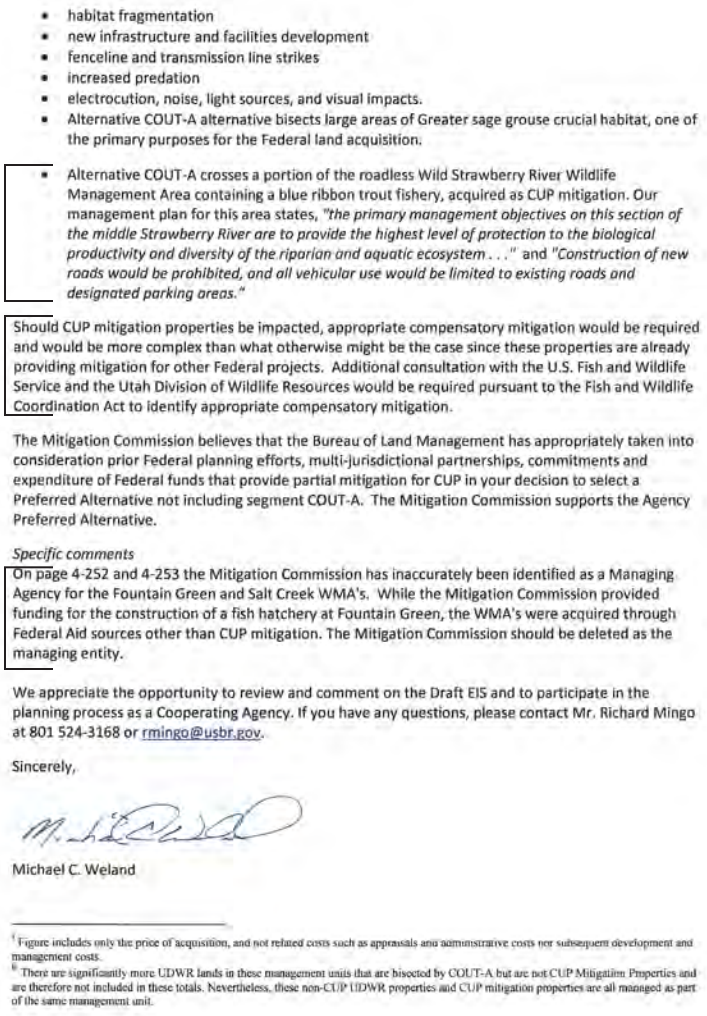
Response(s)

F4a

Comment noted. Potential impacts on the Utah Reclamation, Mitigation and Conservation Commission lands are discussed in Section 3.2.14.

Comment(s)

F4 **Utah Reclamation Mitigation and Conservation Commission (cont.)**



- habitat fragmentation
- new infrastructure and facilities development
- fenceline and transmission line strikes
- increased predation
- electrocution, noise, light sources, and visual impacts.
- Alternative COUT-A alternative bisects large areas of Greater sage grouse crucial habitat, one of the primary purposes for the Federal land acquisition.

F4b
- Alternative COUT-A crosses a portion of the roadless Wild Strawberry River Wildlife Management Area containing a blue ribbon trout fishery, acquired as CUP mitigation. Our management plan for this area states, *"the primary management objectives on this section of the middle Strawberry River are to provide the highest level of protection to the biological productivity and diversity of the riparian and aquatic ecosystem . . ."* and *"Construction of new roads would be prohibited, and all vehicular use would be limited to existing roads and designated parking areas."*

F4c
Should CUP mitigation properties be impacted, appropriate compensatory mitigation would be required and would be more complex than what otherwise might be the case since these properties are already providing mitigation for other Federal projects. Additional consultation with the U.S. Fish and Wildlife Service and the Utah Division of Wildlife Resources would be required pursuant to the Fish and Wildlife Coordination Act to identify appropriate compensatory mitigation.

The Mitigation Commission believes that the Bureau of Land Management has appropriately taken into consideration prior Federal planning efforts, multi-jurisdictional partnerships, commitments and expenditure of Federal funds that provide partial mitigation for CUP in your decision to select a Preferred Alternative not including segment COUT-A. The Mitigation Commission supports the Agency Preferred Alternative.

Specific comments

F4d
On page 4-252 and 4-253 the Mitigation Commission has inaccurately been identified as a Managing Agency for the Fountain Green and Salt Creek WMA's. While the Mitigation Commission provided funding for the construction of a fish hatchery at Fountain Green, the WMA's were acquired through Federal Aid sources other than CUP mitigation. The Mitigation Commission should be deleted as the managing entity.

We appreciate the opportunity to review and comment on the Draft EIS and to participate in the planning process as a Cooperating Agency. If you have any questions, please contact Mr. Richard Mingo at 801 524-3168 or rmingo@usbr.gov.

Sincerely,

Michael C. Weland

---

[i] Figure includes only the price of acquisition, and not related costs such as appraisals and administrative costs nor subsequent development and management costs.

[ii] There are significantly more UDWR lands in these management units that are bisected by COUT-A but are not CUP Mitigation Properties and are therefore not included in these totals. Nevertheless, these non-CUP UDWR properties and CUP mitigation properties are all managed as part of the same management unit.

Response(s)

F4b

Potential impacts on the Utah Reclamation Mitigation and Conservation Commission lands are discussed in Section 3.2.14 in the Final EIS. Potential impacts on riparian and aquatic ecosystems are discussed in Section 3.2.10.

A detailed access road plan will be developed in the POD for the Project. Construction of access roads will be coordinated with the applicable land-management agency and/or landowner to ensure existing roads are used first; and if new roads need to be constructed, it is done in accordance with the land-management agency.

F4c

See response to Comment F2fg.

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation, to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

F4d

The clarification is noted and this error has been corrected in the Final EIS.

Comment(s)

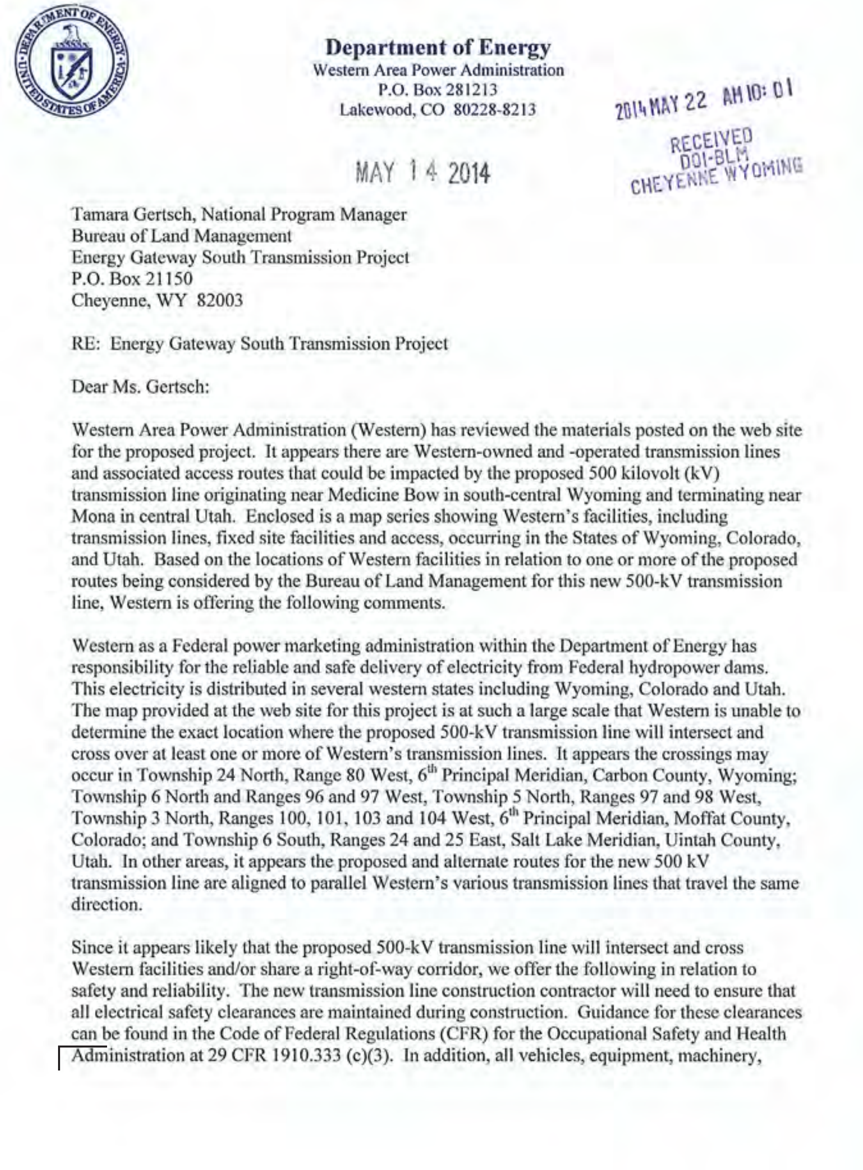
Response(s)

F4 **Utah Reclamation Mitigation and Conservation Commission (cont.)**

Cc: Mr. Kerry Schwartz, U.S. Bureau of Reclamation
Ms. Betsy Hermann, U.S. Fish and Wildlife Service
Mr. Jason Vernon, Utah Division of Wildlife Resources

Comment(s) | **Response(s)**

F5 **Western Area Power Administration**



Department of Energy
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

MAY 14 2014

Tamara Gertsch, National Program Manager
Bureau of Land Management
Energy Gateway South Transmission Project
P.O. Box 21150
Cheyenne, WY 82003

RE: Energy Gateway South Transmission Project

Dear Ms. Gertsch:

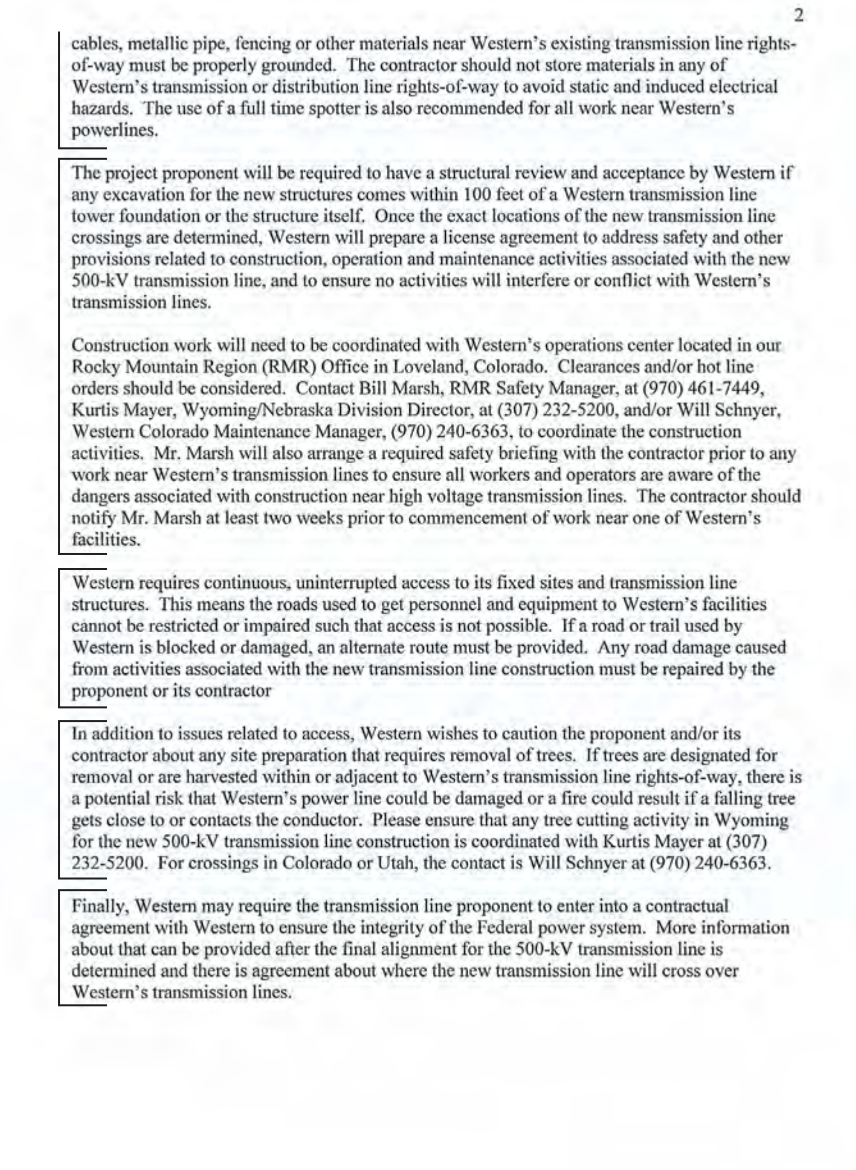
Western Area Power Administration (Western) has reviewed the materials posted on the web site for the proposed project. It appears there are Western-owned and -operated transmission lines and associated access routes that could be impacted by the proposed 500 kilovolt (kV) transmission line originating near Medicine Bow in south-central Wyoming and terminating near Mona in central Utah. Enclosed is a map series showing Western's facilities, including transmission lines, fixed site facilities and access, occurring in the States of Wyoming, Colorado, and Utah. Based on the locations of Western facilities in relation to one or more of the proposed routes being considered by the Bureau of Land Management for this new 500-kV transmission line, Western is offering the following comments.

Western as a Federal power marketing administration within the Department of Energy has responsibility for the reliable and safe delivery of electricity from Federal hydropower dams. This electricity is distributed in several western states including Wyoming, Colorado and Utah. The map provided at the web site for this project is at such a large scale that Western is unable to determine the exact location where the proposed 500-kV transmission line will intersect and cross over at least one or more of Western's transmission lines. It appears the crossings may occur in Township 24 North, Range 80 West, 6th Principal Meridian, Carbon County, Wyoming; Township 6 North and Ranges 96 and 97 West, Township 5 North, Ranges 97 and 98 West, Township 3 North, Ranges 100, 101, 103 and 104 West, 6th Principal Meridian, Moffat County, Colorado; and Township 6 South, Ranges 24 and 25 East, Salt Lake Meridian, Uintah County, Utah. In other areas, it appears the proposed and alternate routes for the new 500 kV transmission line are aligned to parallel Western's various transmission lines that travel the same direction.

Since it appears likely that the proposed 500-kV transmission line will intersect and cross Western facilities and/or share a right-of-way corridor, we offer the following in relation to safety and reliability. The new transmission line construction contractor will need to ensure that all electrical safety clearances are maintained during construction. Guidance for these clearances can be found in the Code of Federal Regulations (CFR) for the Occupational Safety and Health

F5a Administration at 29 CFR 1910.333 (c)(3). In addition, all vehicles, equipment, machinery,

F5 Western Area Power Administration (cont.)



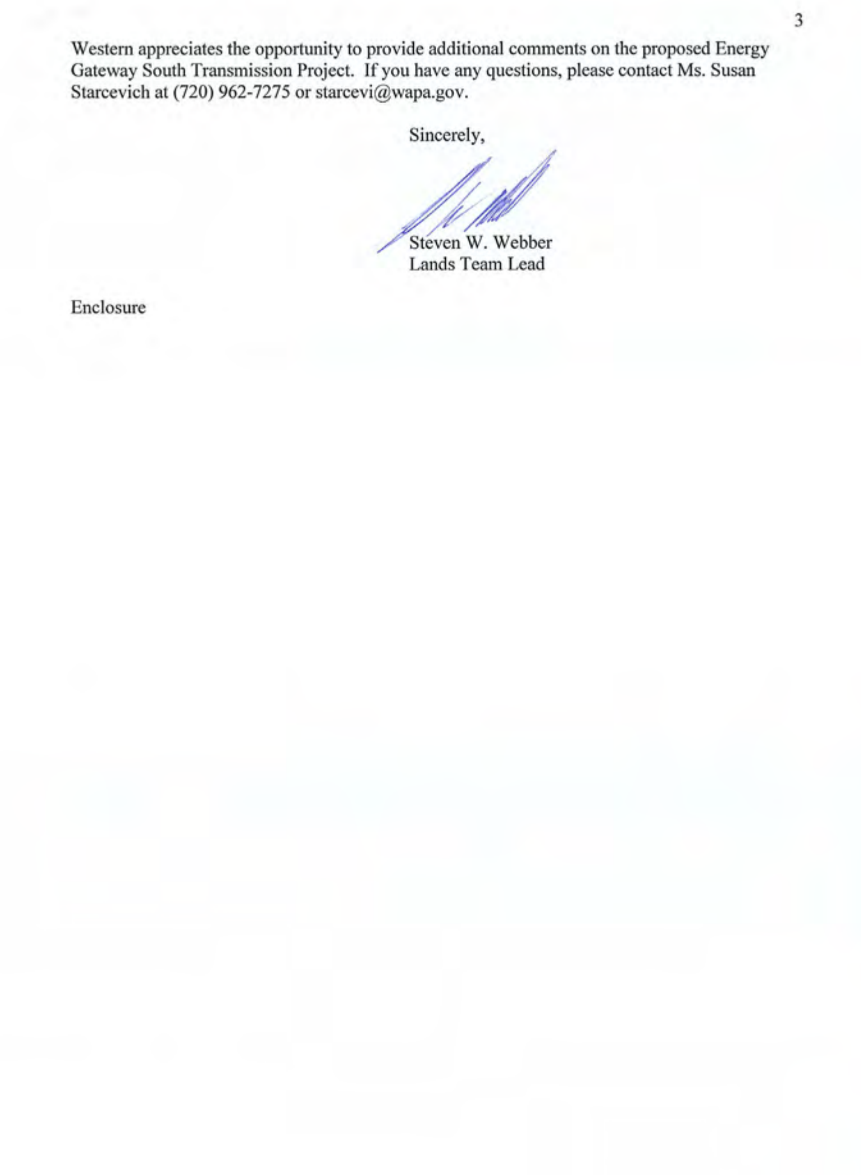
2

	Comment(s)	Response(s)
F5a	cables, metallic pipe, fencing or other materials near Western's existing transmission line rights-of-way must be properly grounded. The contractor should not store materials in any of Western's transmission or distribution line rights-of-way to avoid static and induced electrical hazards. The use of a full time spotter is also recommended for all work near Western's powerlines.	The information provided by Western Area Power Administration has been provided to the Applicant.
F5b	The project proponent will be required to have a structural review and acceptance by Western if any excavation for the new structures comes within 100 feet of a Western transmission line tower foundation or the structure itself. Once the exact locations of the new transmission line crossings are determined, Western will prepare a license agreement to address safety and other provisions related to construction, operation and maintenance activities associated with the new 500-kV transmission line, and to ensure no activities will interfere or conflict with Western's transmission lines. Construction work will need to be coordinated with Western's operations center located in our Rocky Mountain Region (RMR) Office in Loveland, Colorado. Clearances and/or hot line orders should be considered. Contact Bill Marsh, RMR Safety Manager, at (970) 461-7449, Kurtis Mayer, Wyoming/Nebraska Division Director, at (307) 232-5200, and/or Will Schnyer, Western Colorado Maintenance Manager, (970) 240-6363, to coordinate the construction activities. Mr. Marsh will also arrange a required safety briefing with the contractor prior to any work near Western's transmission lines to ensure all workers and operators are aware of the dangers associated with construction near high voltage transmission lines. The contractor should notify Mr. Marsh at least two weeks prior to commencement of work near one of Western's facilities.	See response to Comment F5a
F5c	Western requires continuous, uninterrupted access to its fixed sites and transmission line structures. This means the roads used to get personnel and equipment to Western's facilities cannot be restricted or impaired such that access is not possible. If a road or trail used by Western is blocked or damaged, an alternate route must be provided. Any road damage caused from activities associated with the new transmission line construction must be repaired by the proponent or its contractor	See response to Comment F5a.
F5d	In addition to issues related to access, Western wishes to caution the proponent and/or its contractor about any site preparation that requires removal of trees. If trees are designated for removal or are harvested within or adjacent to Western's transmission line rights-of-way, there is a potential risk that Western's power line could be damaged or a fire could result if a falling tree gets close to or contacts the conductor. Please ensure that any tree cutting activity in Wyoming for the new 500-kV transmission line construction is coordinated with Kurtis Mayer at (307) 232-5200. For crossings in Colorado or Utah, the contact is Will Schnyer at (970) 240-6363.	See response to Comment F5a.
F5e	Finally, Western may require the transmission line proponent to enter into a contractual agreement with Western to ensure the integrity of the Federal power system. More information about that can be provided after the final alignment for the 500-kV transmission line is determined and there is agreement about where the new transmission line will cross over Western's transmission lines.	See response to Comment F5a.

Comment(s)

Response(s)

F5 | **Western Area Power Administration (cont.)**



Western appreciates the opportunity to provide additional comments on the proposed Energy Gateway South Transmission Project. If you have any questions, please contact Ms. Susan Starcevich at (720) 962-7275 or starcevi@wapa.gov.

Sincerely,

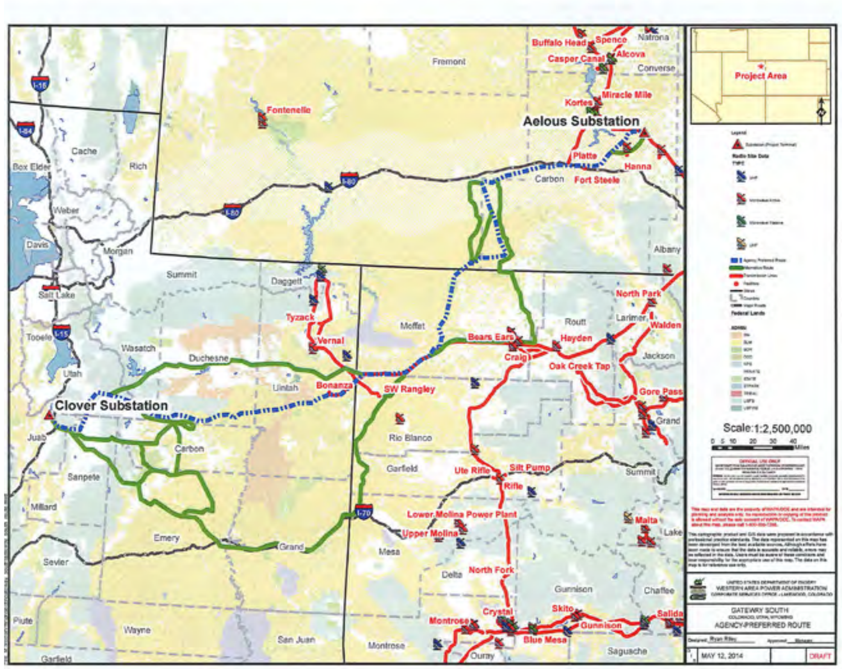
Steven W. Webber
Lands Team Lead

Enclosure

Comment(s)

Response(s)

F5 **Western Area Power Administration (cont.)**

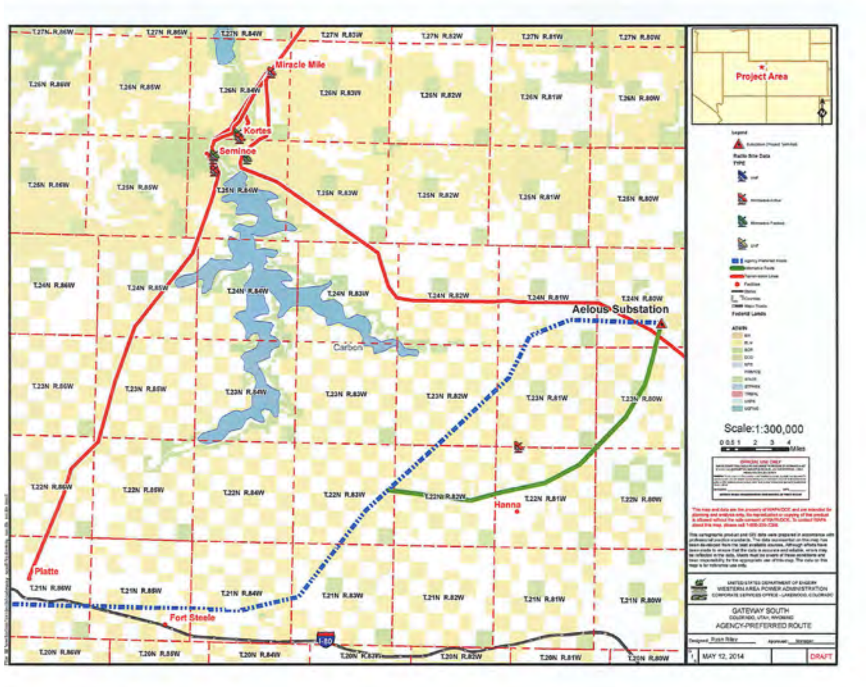


Comment(s)

Response(s)

F5

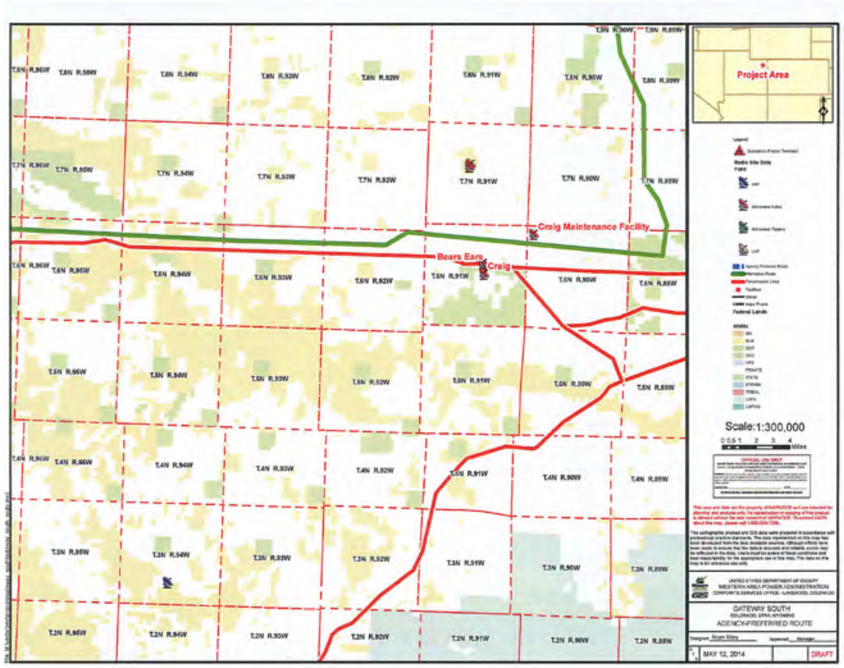
Western Area Power Administration (cont.)



Comment(s)

Response(s)

F5	Western Area Power Administration (cont.)

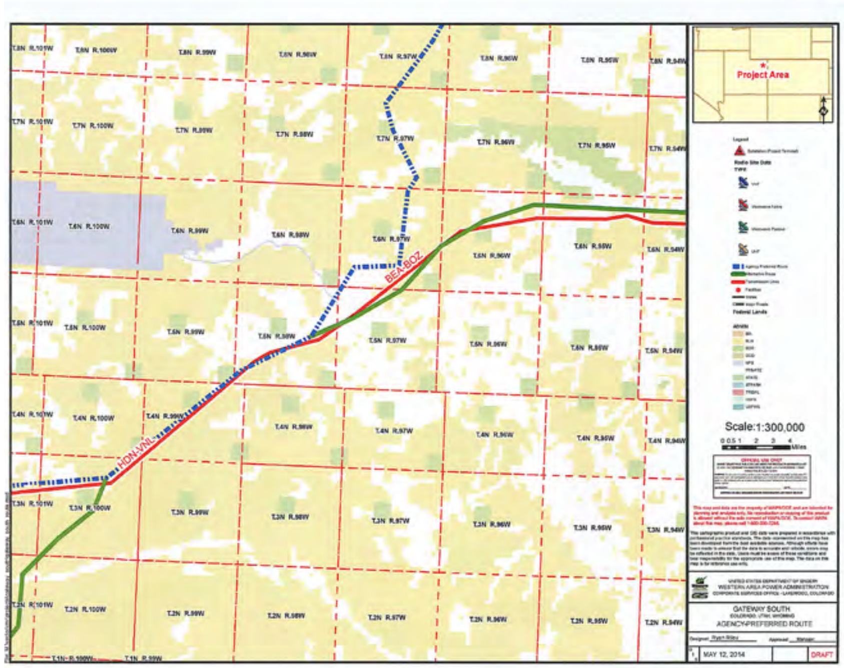


Comment(s)

Response(s)

F5

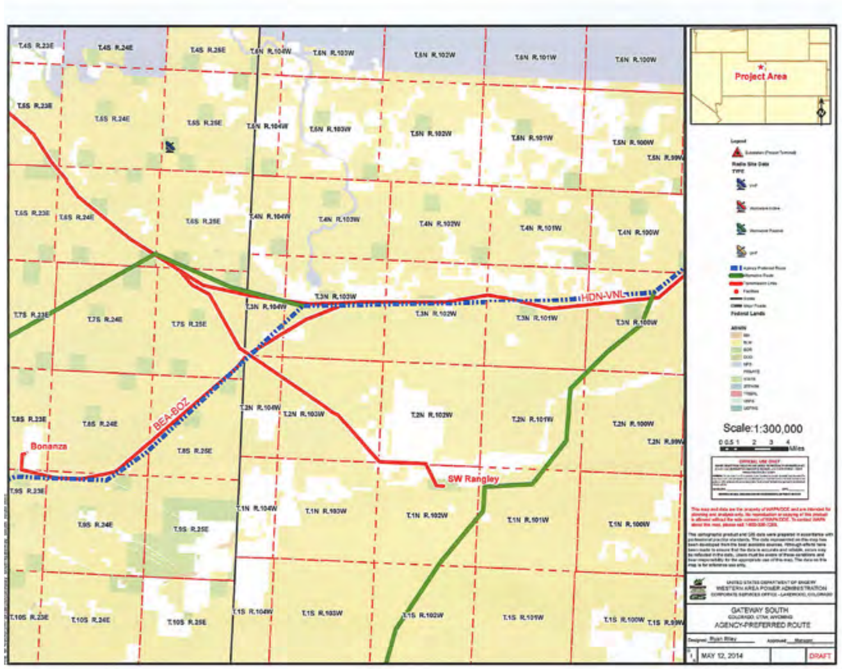
Western Area Power Administration (cont.)



Comment(s)

Response(s)

F5 | **Western Area Power Administration (cont.)**



Comment(s)

Response(s)

F5 **Western Area Power Administration (cont.)**

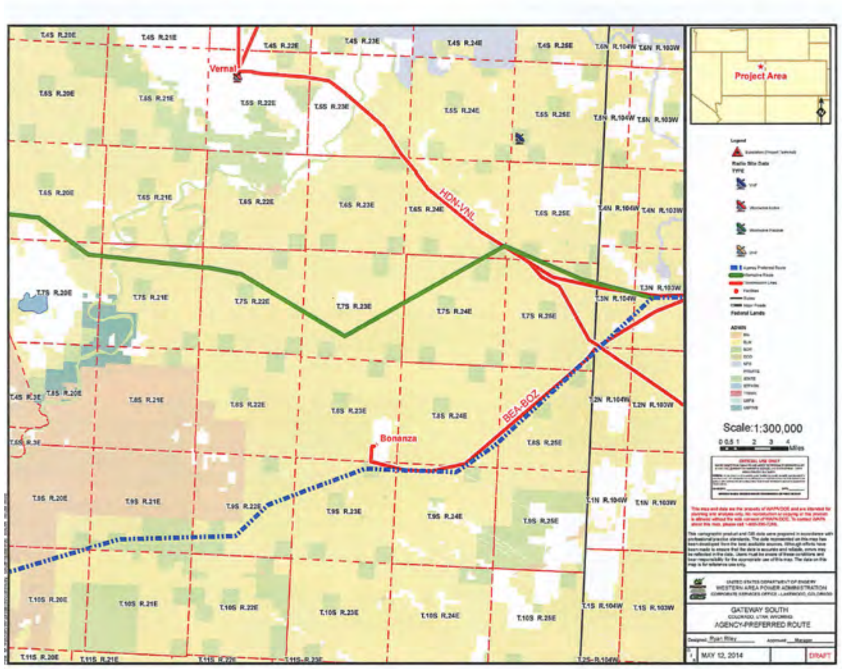
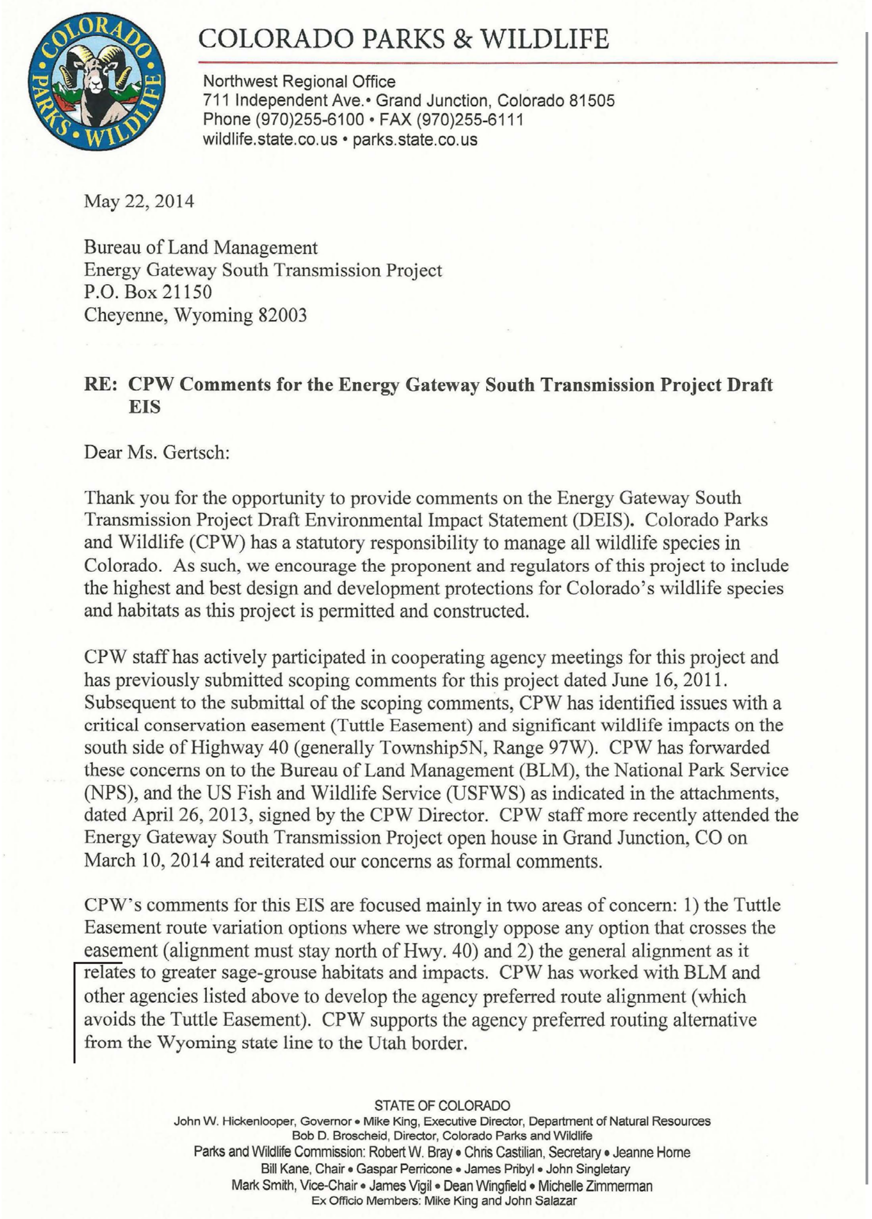


Exhibit P2
State

Comment(s)

S1 **Colorado Parks and Wildlife**



COLORADO PARKS & WILDLIFE

Northwest Regional Office
711 Independent Ave.• Grand Junction, Colorado 81505
Phone (970)255-6100 • FAX (970)255-6111
wildlife.state.co.us • parks.state.co.us

May 22, 2014

Bureau of Land Management
Energy Gateway South Transmission Project
P.O. Box 21150
Cheyenne, Wyoming 82003

RE: CPW Comments for the Energy Gateway South Transmission Project Draft EIS

Dear Ms. Gertsch:

Thank you for the opportunity to provide comments on the Energy Gateway South Transmission Project Draft Environmental Impact Statement (DEIS). Colorado Parks and Wildlife (CPW) has a statutory responsibility to manage all wildlife species in Colorado. As such, we encourage the proponent and regulators of this project to include the highest and best design and development protections for Colorado's wildlife species and habitats as this project is permitted and constructed.

CPW staff has actively participated in cooperating agency meetings for this project and has previously submitted scoping comments for this project dated June 16, 2011. Subsequent to the submittal of the scoping comments, CPW has identified issues with a critical conservation easement (Tuttle Easement) and significant wildlife impacts on the south side of Highway 40 (generally Township5N, Range 97W). CPW has forwarded these concerns on to the Bureau of Land Management (BLM), the National Park Service (NPS), and the US Fish and Wildlife Service (USFWS) as indicated in the attachments, dated April 26, 2013, signed by the CPW Director. CPW staff more recently attended the Energy Gateway South Transmission Project open house in Grand Junction, CO on March 10, 2014 and reiterated our concerns as formal comments.

CPW's comments for this EIS are focused mainly in two areas of concern: 1) the Tuttle Easement route variation options where we strongly oppose any option that crosses the easement (alignment must stay north of Hwy. 40) and 2) the general alignment as it relates to greater sage-grouse habitats and impacts. CPW has worked with BLM and other agencies listed above to develop the agency preferred route alignment (which avoids the Tuttle Easement). CPW supports the agency preferred routing alternative from the Wyoming state line to the Utah border.

S1a

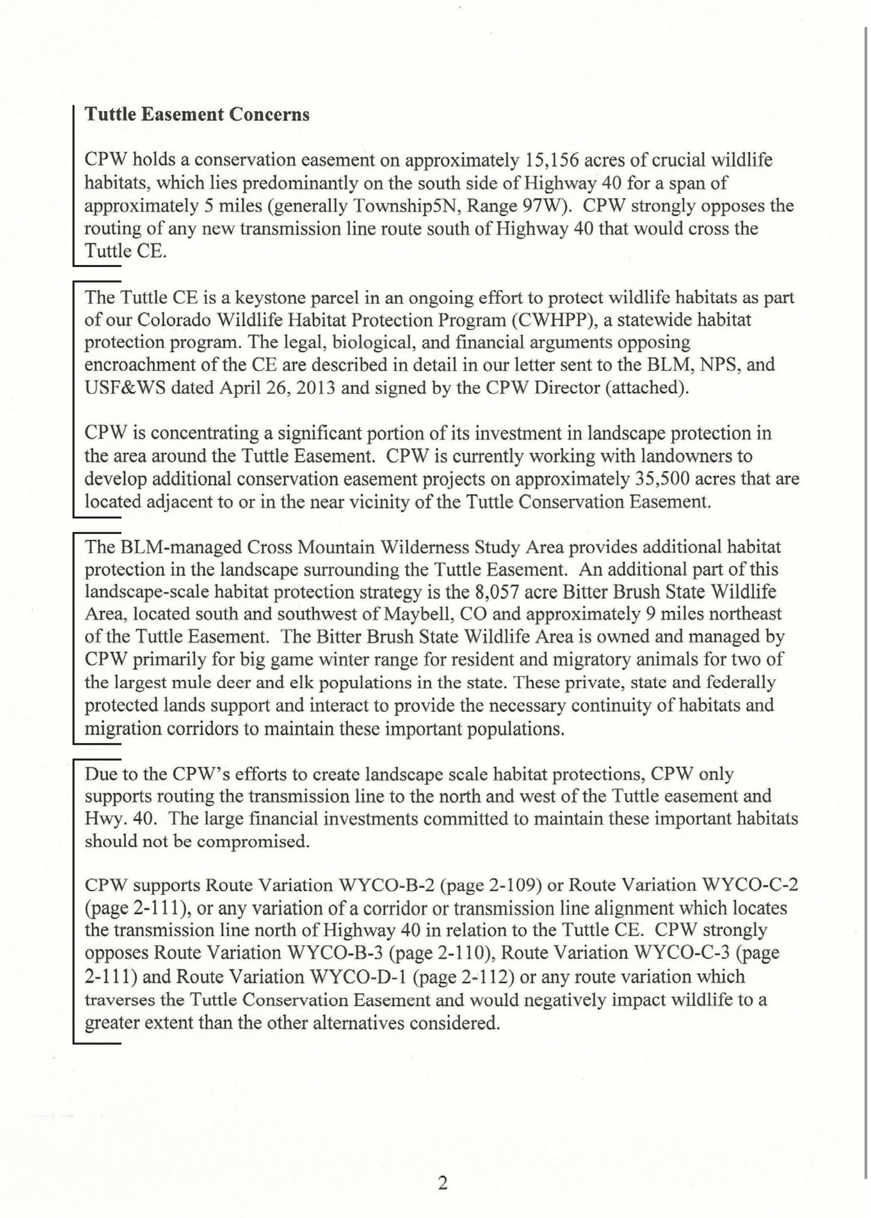
STATE OF COLORADO
John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources
Bob D. Broscheid, Director, Colorado Parks and Wildlife
Parks and Wildlife Commission: Robert W. Bray • Chris Castilian, Secretary • Jeanne Horne
Bill Kane, Chair • Gaspar Perricone • James Pribyl • John Singletary
Mark Smith, Vice-Chair • James Vigil • Dean Wingfield • Michelle Zimmerman
Ex Officio Members: Mike King and John Salazar

Response(s)

S1a Comment and route preference noted.

Comment(s)

S1 **Colorado Parks and Wildlife (cont.)**



Tuttle Easement Concerns

S1a CPW holds a conservation easement on approximately 15,156 acres of crucial wildlife habitats, which lies predominantly on the south side of Highway 40 for a span of approximately 5 miles (generally Township5N, Range 97W). CPW strongly opposes the routing of any new transmission line route south of Highway 40 that would cross the Tuttle CE.

S1b The Tuttle CE is a keystone parcel in an ongoing effort to protect wildlife habitats as part of our Colorado Wildlife Habitat Protection Program (CWHPP), a statewide habitat protection program. The legal, biological, and financial arguments opposing encroachment of the CE are described in detail in our letter sent to the BLM, NPS, and USF&WS dated April 26, 2013 and signed by the CPW Director (attached).

CPW is concentrating a significant portion of its investment in landscape protection in the area around the Tuttle Easement. CPW is currently working with landowners to develop additional conservation easement projects on approximately 35,500 acres that are located adjacent to or in the near vicinity of the Tuttle Conservation Easement.

S1c The BLM-managed Cross Mountain Wilderness Study Area provides additional habitat protection in the landscape surrounding the Tuttle Easement. An additional part of this landscape-scale habitat protection strategy is the 8,057 acre Bitter Brush State Wildlife Area, located south and southwest of Maybell, CO and approximately 9 miles northeast of the Tuttle Easement. The Bitter Brush State Wildlife Area is owned and managed by CPW primarily for big game winter range for resident and migratory animals for two of the largest mule deer and elk populations in the state. These private, state and federally protected lands support and interact to provide the necessary continuity of habitats and migration corridors to maintain these important populations.

S1d Due to the CPW's efforts to create landscape scale habitat protections, CPW only supports routing the transmission line to the north and west of the Tuttle easement and Hwy. 40. The large financial investments committed to maintain these important habitats should not be compromised.

CPW supports Route Variation WYCO-B-2 (page 2-109) or Route Variation WYCO-C-2 (page 2-111), or any variation of a corridor or transmission line alignment which locates the transmission line north of Highway 40 in relation to the Tuttle CE. CPW strongly opposes Route Variation WYCO-B-3 (page 2-110), Route Variation WYCO-C-3 (page 2-111) and Route Variation WYCO-D-1 (page 2-112) or any route variation which traverses the Tuttle Conservation Easement and would negatively impact wildlife to a greater extent than the other alternatives considered.

2

Response(s)

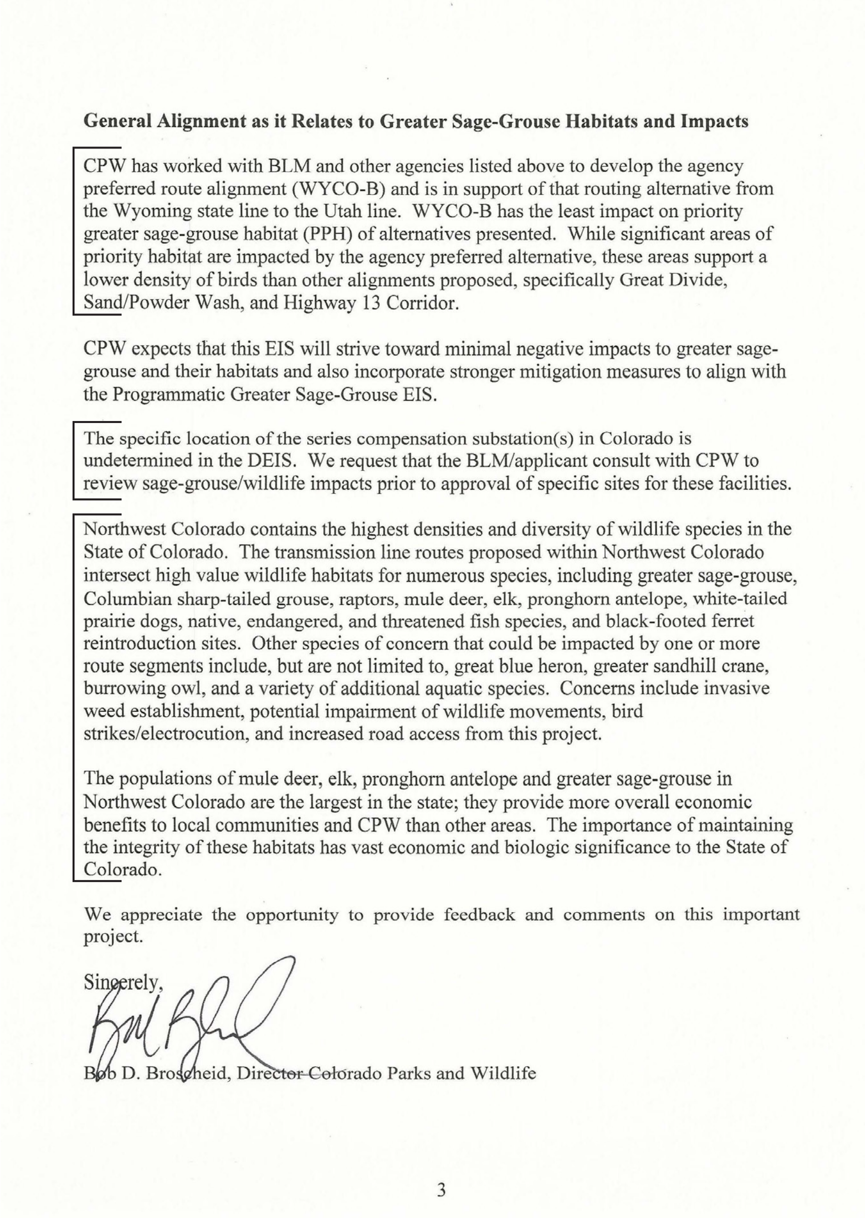
S1b Comment noted. The Final Environmental Impact Statement (EIS) reflects conservation easements identified by the National Conservation Easement Database website, as well as state and local agencies.

S1c Comment noted. Potential impacts on wildlife management areas (WMA) are discussed in Section 3.2.15. Potential impacts on the biological resources that may occur in these WMAs are discussed in Sections 3.2.7 and 3.2.8.

S1d Comment and route preference noted.

Comment(s)

S1 **Colorado Parks and Wildlife (cont.)**



General Alignment as it Relates to Greater Sage-Grouse Habitats and Impacts

S1e CPW has worked with BLM and other agencies listed above to develop the agency preferred route alignment (WYCO-B) and is in support of that routing alternative from the Wyoming state line to the Utah line. WYCO-B has the least impact on priority greater sage-grouse habitat (PPH) of alternatives presented. While significant areas of priority habitat are impacted by the agency preferred alternative, these areas support a lower density of birds than other alignments proposed, specifically Great Divide, Sand/Powder Wash, and Highway 13 Corridor.

CPW expects that this EIS will strive toward minimal negative impacts to greater sage-grouse and their habitats and also incorporate stronger mitigation measures to align with the Programmatic Greater Sage-Grouse EIS.

S1f The specific location of the series compensation substation(s) in Colorado is undetermined in the DEIS. We request that the BLM/applicant consult with CPW to review sage-grouse/wildlife impacts prior to approval of specific sites for these facilities.

S1g Northwest Colorado contains the highest densities and diversity of wildlife species in the State of Colorado. The transmission line routes proposed within Northwest Colorado intersect high value wildlife habitats for numerous species, including greater sage-grouse, Columbian sharp-tailed grouse, raptors, mule deer, elk, pronghorn antelope, white-tailed prairie dogs, native, endangered, and threatened fish species, and black-footed ferret reintroduction sites. Other species of concern that could be impacted by one or more route segments include, but are not limited to, great blue heron, greater sandhill crane, burrowing owl, and a variety of additional aquatic species. Concerns include invasive weed establishment, potential impairment of wildlife movements, bird strikes/electrocution, and increased road access from this project.

The populations of mule deer, elk, pronghorn antelope and greater sage-grouse in Northwest Colorado are the largest in the state; they provide more overall economic benefits to local communities and CPW than other areas. The importance of maintaining the integrity of these habitats has vast economic and biologic significance to the State of Colorado.

We appreciate the opportunity to provide feedback and comments on this important project.

Sincerely,

Bob D. Broscheid, Director Colorado Parks and Wildlife

3

Response(s)

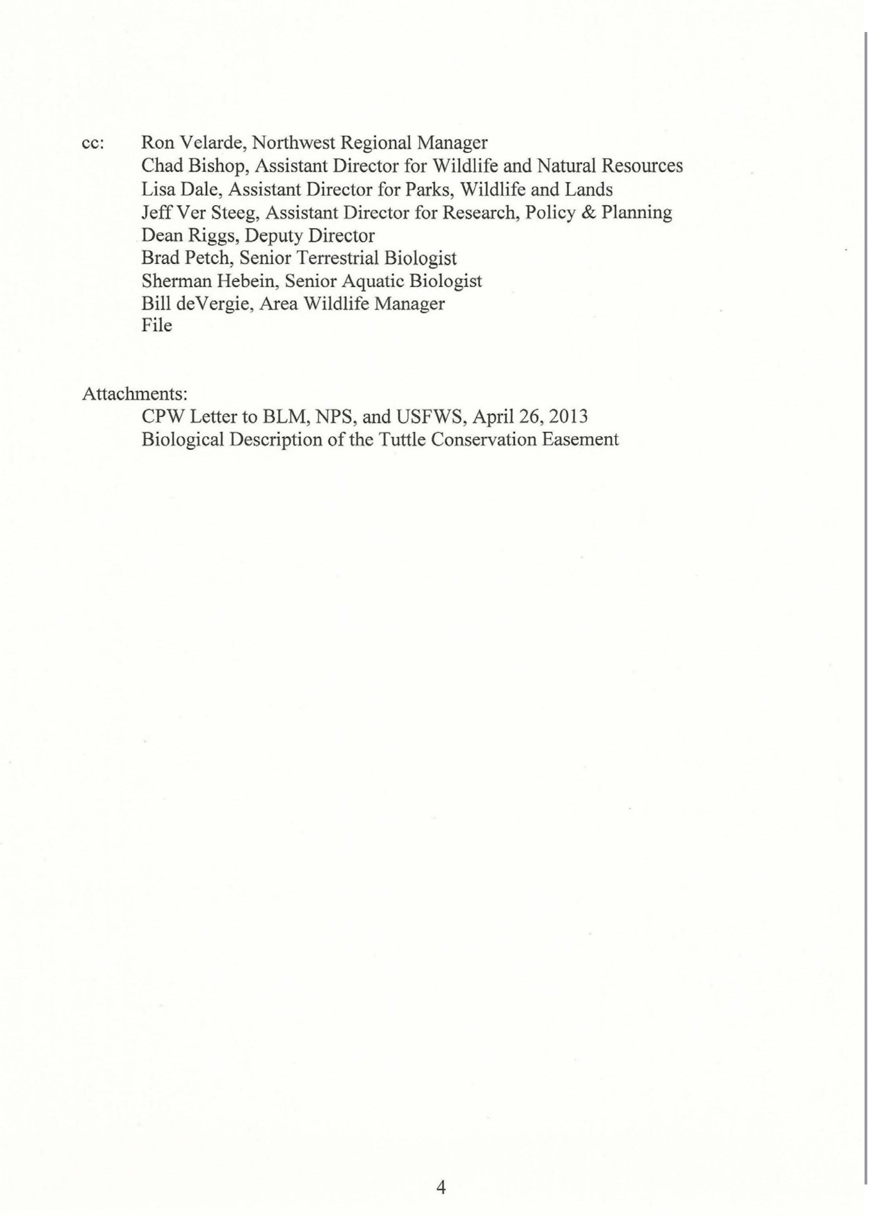
S1e Comment and route preference noted. The alignment preferred by the Bureau of Land Management (BLM) Little Snake Field and, therefore, the BLM's preferred alignment along the path of the agency-preferred route, is the alignment in the Westwide Energy Corridor, parallel to the Bears Ears to Bonanza 345-kilovolt transmission line, crossing the area designated as the Tuttle Ranch Conservation Easement. The BLM also prefers the alignment be colocated approximately 300 feet from the route alignment for the TransWest Express transmission project. The BLM's intent is to reduce the amount of potential impacts and avoid potential proliferation of transmission lines across the landscape in accordance with the Federal Land Policy and Management Act of 1976.

S1f The potential impacts on sage-grouse and other wildlife resource related to the series compensation substations are disclosed for the siting areas in the EIS. Final site selection will be coordinated with the cooperating agencies, including the state wildlife agencies as well as the Biological Resources Task Group established for the Energy Gateway South Transmission Project (Project).

S1g The importance of the Tuttle Ranch Conservation Easement for sage-grouse, white-tailed prairie dogs, and black-footed ferrets are discussed in Section 3.2.8.5.4, under the heading Affected Environment (Colorado).

Impacts on sage-grouse, white-tailed prairie dogs, and black-footed ferrets will be minimized through the application of the design features and selective mitigation measures listed in Table 3-104 (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3).

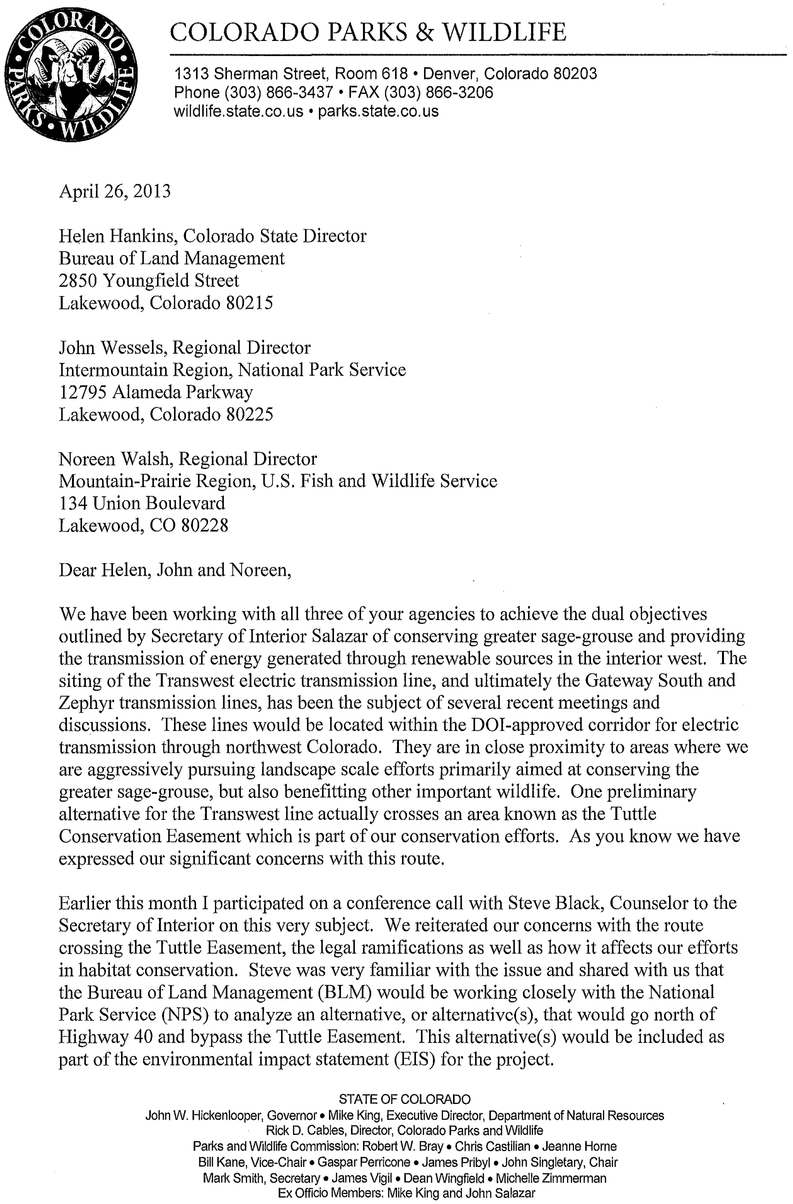
S1 **Colorado Parks and Wildlife (cont.)**



cc:
Ron Velarde, Northwest Regional Manager
Chad Bishop, Assistant Director for Wildlife and Natural Resources
Lisa Dale, Assistant Director for Parks, Wildlife and Lands
Jeff Ver Steeg, Assistant Director for Research, Policy & Planning
Dean Riggs, Deputy Director
Brad Petch, Senior Terrestrial Biologist
Sherman Hebein, Senior Aquatic Biologist
Bill deVergie, Area Wildlife Manager
File

Attachments:
CPW Letter to BLM, NPS, and USFWS, April 26, 2013
Biological Description of the Tuttle Conservation Easement

S1 **Colorado Parks and Wildlife (cont.)**



COLORADO PARKS & WILDLIFE
1313 Sherman Street, Room 618 • Denver, Colorado 80203
Phone (303) 866-3437 • FAX (303) 866-3206
wildlife.state.co.us • parks.state.co.us

April 26, 2013

Helen Hankins, Colorado State Director
Bureau of Land Management
2850 Youngfield Street
Lakewood, Colorado 80215

John Wessels, Regional Director
Intermountain Region, National Park Service
12795 Alameda Parkway
Lakewood, Colorado 80225

Noreen Walsh, Regional Director
Mountain-Prairie Region, U.S. Fish and Wildlife Service
134 Union Boulevard
Lakewood, CO 80228

Dear Helen, John and Noreen,

We have been working with all three of your agencies to achieve the dual objectives outlined by Secretary of Interior Salazar of conserving greater sage-grouse and providing the transmission of energy generated through renewable sources in the interior west. The siting of the Transwest electric transmission line, and ultimately the Gateway South and Zephyr transmission lines, has been the subject of several recent meetings and discussions. These lines would be located within the DOI-approved corridor for electric transmission through northwest Colorado. They are in close proximity to areas where we are aggressively pursuing landscape scale efforts primarily aimed at conserving the greater sage-grouse, but also benefitting other important wildlife. One preliminary alternative for the Transwest line actually crosses an area known as the Tuttle Conservation Easement which is part of our conservation efforts. As you know we have expressed our significant concerns with this route.

Earlier this month I participated on a conference call with Steve Black, Counselor to the Secretary of Interior on this very subject. We reiterated our concerns with the route crossing the Tuttle Easement, the legal ramifications as well as how it affects our efforts in habitat conservation. Steve was very familiar with the issue and shared with us that the Bureau of Land Management (BLM) would be working closely with the National Park Service (NPS) to analyze an alternative, or alternative(s), that would go north of Highway 40 and bypass the Tuttle Easement. This alternative(s) would be included as part of the environmental impact statement (EIS) for the project.

STATE OF COLORADO
John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources
Rick D. Cables, Director, Colorado Parks and Wildlife
Parks and Wildlife Commission: Robert W. Bray • Chris Castilian • Jeanne Horne
Bill Kane, Vice-Chair • Gaspar Perricone • James Pribyl • John Singletary, Chair
Mark Smith, Secretary • James Vigil • Dean Wingfield • Michelle Zimmerman
Ex Officio Members: Mike King and John Salazar

Comment(s)

Response(s)

S1 **Colorado Parks and Wildlife (cont.)**

I offered to Steve that Colorado Parks and Wildlife (CPW) would be providing written comments for consideration as this analysis moves forward. This letter should be considered part of our comments, as a cooperating agency, for not only the Transwest line, but also for the Gateway South and Zephyr transmission lines.

BLM has the lead role in the EIS process and will decide where these three transmission lines will be located within the approved corridor. Both the BLM and the USFWS have worked closely with our agency in wildlife conservation across Colorado, and specifically with greater sage-grouse conservation efforts in this area of the state. USFWS has invested over $500,000 in the Tuttle Easement. NPS has a significant role in this issue because of their access road, which is part of Dinosaur National Monument and travels north of Highway 40 near the Tuttle Easement.

S1h We believe that routing the transmission lines within the area of the approved corridor that is north of Highway 40 is environmentally, legally, and politically preferable to crossing the area south of Highway 40, which includes the Tuttle Easement. As we understand the analysis at this point in the process, the single objection to a route north of Highway 40 is that the transmission lines would cross the 200 ft. wide strip of land acquired by NPS to access Dinosaur National Monument. We understand this strip of land is to be managed, in part, to protect the scenic values of the Monument. An objective analysis of the environmental impacts of alternative routes must weigh the effects on the scenic quality of this specific area against the effects on the wildlife values protected by the Tuttle Easement. We note that the scenic values of the area just north of Highway 40 are significantly impaired by the highway itself, existing electric distribution lines, ranch houses, outbuildings, and other development. Further, this area is many miles from the Monument proper. The following discussion provides information to address these concerns and also proposes alternatives for consideration.

Colorado Parks and Wildlife (CPW) assessed the relative values of wildlife habitats that would be impacted by transmission line routes to the north of the Tuttle Conservation Easement and by transmission line routes along the previously-developed alternatives which cross the Tuttle Conservation Easement. Additionally, this letter contains an assessment of the legal and practical implications of routing these transmission lines through the Tuttle Easement, in light of the impact to the conservation values intended to be protected by this Easement.

Colorado Parks and Wildlife holds conservation easements for purposes which include protecting and managing wildlife habitats in perpetuity for big game and for a variety of state and/or federally designated special concern, threatened, or endangered species. Furthermore, all CPW conservation easements produce benefits for wildlife well beyond the maintenance of open space, generally through a cooperative management plan with

S1h Comment noted. Additional route variation that crosses the Deerlodge Road on a state-owned parcel is analyzed in the Final EIS. Also, additional analysis to support National Park Service decision-making is included in Appendix G. This analysis includes Alternative WYCO-B, which crosses the Tuttle Ranch Conservation Easement.

Comment(s)

S1 **Colorado Parks and Wildlife (cont.)**

the landowner where long-term wildlife and habitat management goals are described and maintained.

S1i CPW completed a conservation easement on 15,076 acres of the Tuttle Ranch in July 2012. The Tuttle Conservation Easement was acquired through the expenditure of over four million dollars, which included nearly $3.75 million in allocations from Colorado hunting license fees, the Colorado Habitat Stamp fund, and Great Outdoors Colorado, together with approximately $500,000 in U.S. Fish and Wildlife Service monies from the non-traditional Section 6 (federally listed endangered species) grant fund. The landowner also donated a significant portion of the value of the conservation easement.

S1j The Tuttle Conservation Easement specifically protects and provides for the management of habitat for:

- Black-footed ferret (federally endangered). The protected property is nearby the only extant release area for black-footed ferret in Colorado. The conservation easement and management plan documents include provisions for eventual release of a new population of the species in Colorado.
- White-tailed prairie dog (state species of concern and previously proposed for federal listing). The protected property includes colonies of prairie dogs that have historically exceeded all other areas in northwestern Colorado for density and number of prairie dogs.
- Greater sage-grouse (federally listed Candidate species, state species of concern). The protected property contains year-long habitat for sage-grouse, including an active lek site.

S1k

- Big game wildlife (including elk, mule deer, and pronghorn antelope). The protected property contains high quality winter range for portions of the largest herds of elk and mule deer in Colorado, as well as the distal end of long-distance seasonal migratory routes for these herds. The property also provides year-long habitat for pronghorn antelope.

These wildlife habitat values are treated in greater detail in the Biological Description attached to this letter.

S1l In addition to property-specific habitat values, the Tuttle Conservation Easement property is a keystone parcel in an ongoing effort to protect wildlife habitats at a landscape scale. CPW is concentrating a significant portion of its investment in landscape protection in the area around the Tuttle Easement. CPW is currently working with landowners to

Response(s)

S1i The additional information regarding the Tuttle Ranch Conservation Easement relevant to the analysis was incorporated into Section 3.2.15.

S1j The importance of the Tuttle Ranch Conservation Easement for sage-grouse, white-tailed prairie dogs, and black-footed ferrets are discussed in Section 3.2.8.5.4, under the heading Affected Environment (Colorado).

Impacts on sage-grouse, white-tailed prairie dogs, and black-footed ferrets will be minimized through the application of the design features and selective mitigation measures listed in Table 3-104 (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3).

S1k The importance of the Tuttle Ranch Conservation Easement for deer and elk winter range and migratory routes, as well as pronghorn populations are discussed in Section 3.2.7.5.4, under the heading Affected Environment (Colorado).

Impacts on big game will be minimized through the application of the design features and selective mitigation measures listed in Table 3-80 (refer to Mitigation Planning and Effectiveness in Section 3.2.7.4.3).

S1l Comment noted. The Final EIS reflects conservation easements identified by the National Conservation Easement database website, as well as state and local agencies. Potential impacts on the biological resources that may occur in the Tuttle Ranch Conservation Easement and the Cross Mountain Wilderness Study Area are discussed in Sections 3.2.7 and 3.2.8.

Comment(s)

S1 **Colorado Parks and Wildlife (cont.)**

S1l develop additional conservation easement projects on approximately 35,500 acres that are located in the near vicinity of the Tuttle Conservation Easement. An additional part of this landscape-scale habitat protection strategy is the 8,057 acre Bitter Brush State Wildlife Area, located south and southwest of Maybell, CO and approximately 9 miles northeast of the Tuttle Easement. The Bitter Brush State Wildlife Area is managed by CPW primarily for big game winter range for resident and migratory animals, and benefits many of the same big game animals that make use of the Tuttle Easement. The BLM-managed Cross Mountain Wilderness Study Area provides additional habitat protection in the landscape surrounding the Tuttle Easement.

S1m Given the numerical and economic importance and wide distribution of greater sage-grouse, other species of conservation need, and big game in northwestern Colorado, any proposed route for electric transmission line rights of way or corridors in northwestern Colorado will have substantial impacts on Colorado's wildlife. For each of the key wildlife species for which the Tuttle Conservation Easement was procured, habitat south of Highway 40 is of higher value and importance than habitat north of Highway 40. Specific aspects of this contention are described in the Biological Description attached to this letter.

S1n Location of potentially three additional transmission lines across the Tuttle Conservation Easement will significantly diminish the conservation values of the property. If these additional lines were located to the south of the existing lines and spaced according to standards, the existing disturbed area would expand in a manner that would impose industrial conditions on a significant swath of the Tuttle Conservation Easement property. A long looping route to bypass the Tuttle Easement to the south and west (perhaps as much as 25 linear miles of new right of way to bypass the Conservation Easement property) would impact a considerable amount of land that does not currently have significant access or other human disturbance and makes little sense from the perspective of conserving wildlife and natural resource values.

S1o At least two transmission line routing options exist north of Highway 40 that would bypass the Tuttle Conservation Easement. From a purely biological standpoint, transmission line routes concentrated with other development in the Highway 40 corridor (i.e., located as close as possible to the north of the highway) would have less impact on a variety of wildlife species, mainly because there is already significant human disturbance in the immediate vicinity of the highway and existing transmission lines. However, the companies' proposed 0.28 mile (1500') offset from each other means that there may not be much real concentration of rights of way, even along the Highway 40 route. While the companies have said they could narrow the spacing between lines for short distances, neither the actual minimum offset between lines nor the maximum length where this narrowed spacing can occur have been established.

Response(s)

S1m Comment and route preference noted. Relevant elements of the biological description have been incorporated into Sections 3.2.7.5.4 and 3.2.8.5.4.

S1n In 2013, the Western Electricity Coordinating Council (WECC) revised its guidelines regarding separation distance between high-voltage transmission lines to be a minimum of 250 feet. The alternative routes and route variations for the Project were analyzed in the Draft EIS assuming a greater separation distance of 1,500 feet, based on earlier 2008 WECC guidance. Considering the revised WECC guidance, in early 2014, the BLM asked PacifiCorp, doing business as Rocky Mountain Power (Applicant) to adjust the transmission line alignment along the agency-preferred alternative route to be approximately 250 feet from existing linear facilities and 300 feet from other proposed transmission line alignments, where applicable. The BLM's intent is to reduce the amount of potential impacts and avoid potential proliferation of transmission lines across the landscape in accordance with the Federal Land Policy and Management Act of 1976. The alternative routes and route variations for the Project are analyzed in the Final EIS assuming a separation distance of 250 to 300 feet. See also the responses to Comment S1h.

S1o See response to Comment S1n.

	Comment(s)		Response(s)
S1	**Colorado Parks and Wildlife (cont.)**		
S1p	That said, there is ample room for three proposed transmission lines to be routed immediately north of Highway 40. This route option would avoid the Tuttle and Crooked Wash conservation easements and would only extend the disturbance by approximately 0.75 miles to the north of the highway. While this route alternative would require an overhead crossing of the Deer Lodge Park access road into Dinosaur National Monument, this crossing would occur as much as 12 miles from the body of the Monument. This route would bisect extensive areas of private land east and west of the Deer Lodge Park road.	S1p	Comment and route preference noted. See responses to Comments S1h and S1n.
S1q	A second routing option north of Highway 40 would cross the Deer Lodge Park road on the State Land Board parcel located roughly two miles north from the entrance to the road. This route would cause additional disturbance to wildlife over the Highway 40 route because the transmission line rights of way could not be located contiguous with Highway 40 and would result in two parallel clusters of disturbance sources only a couple of miles apart. However, this routing would allow more of the transmission line right of way to occur on BLM land to the north of private land parcels. Those portions of private land crossed by the transmission lines would be located closer to the edge of the parcels, rather than in the center of the parcels as the Highway 40 alternative would require. This routing would reduce the distance between the transmission lines and the boundary of the Cross Mountain Wilderness Study Area and would bring the lines roughly two miles closer to the body of Dinosaur National Monument than would the Highway 40 option.	S1q	See responses to Comments S1h and S1n.
	The biological information presented above and in the attachment argues for routing the proposed Transwest, Gateway South, and Zephyr electric transmission lines around the north end of the Tuttle Conservation Easement (north of Highway 40) to avoid fragmenting habitat of higher value for a variety of big game and sensitive species, including black-footed ferret and greater sage-grouse, which occur on the conservation easement itself.		
S1r	In addition to the negative impact these transmission lines would have on wildlife attributes of the Tuttle Conservation Easement, there are legal and practical impacts and potential financial implications to the landowner. Section 4.R. of the Tuttle Conservation Easement specifically prohibits the construction of above ground public or private utilities, including electrical transmission lines. In order for the landowner to avoid a violation of the terms of the Conservation Easement, the landowner and CPW must first modify this document to specifically allow for installation of these lines on the property. Modification of conservation easements in Colorado is legally complex and politically charged.	S1r	Comment noted.
S1s	In that a conservation easement in Colorado is governed at least in part by contract law, the language of the document itself initially controls the parties' ability to modify the Conservation Easement. Our Attorney General's office has advised us that the state	S1s	Comment noted.

S1 Colorado Parks and Wildlife (cont.)

	Comment(s)		Response(s)
S1s	cannot approve any activity that would diminish the conservation values, per §4.A&B, of the Tuttle Conservation Easement. The pertinent language states: "Any uses or activities on the Property or any portion thereof that would change, disturb, alter, diminish, or impair the Conservation Values, or that would be inconsistent with the purposes of this CE are prohibited". It is our position that the proposed transmission line(s) clearly diminishes those values as evidenced by this letter and the attached biological description.		
S1t	Great Outdoors Colorado, (GOCO) a major funder to this project, has informed CPW that an amendment for these transmission lines would violate GOCO's funding requirements and that GOCO does not envision a funding modification that would rectify this potential violation. Compliance with CPW's Policy requirement regarding funding sources is thus unlikely. We suggest the U.S. Fish and Wildlife Service may likewise find it challenging to approve an amendment given their investment in the Tuttle Easement.	S1t	Comment noted.
S1u	As there was a several million dollar donative component to this grant, the landowner may intend to claim Colorado Conservation Easement tax credits. If so, meeting the final requirement of the CPW Policy will also require that any private donor benefit will not be impermissible under applicable Colorado law or Federal tax codes and regulations. If Colorado Conservation Easement tax credits are claimed, the landowner will also need to be confident that the amendment does not impact the qualification of the landowner's donation for tax benefits or require payment of additional state or federal taxes or penalties.	S1u	Comment noted.
S1v	Finally, in addition to the biological, legal and financial concerns associated with siting of these transmission lines, routes over the Tuttle Conservation Easement pose risks to the credibility and viability of CPW's conservation easement program. An ill-advised conservation easement amendment jeopardizes CPW's ability to accept conservation easements in the future. In 2010, Colorado lawmakers created the Conservation Easement Program and required Annual Certification for all conservation easement grantees for which a state tax credit would be claimed, including CPW. CPW must annually identify and justify all conservation easement amendments. Conservation easement amendments are strongly discouraged in this certification process. Should an amendment be disapproved, CPW's Certification status and its capacity to accept conservation easements would be jeopardized. The most important consideration in a conservation easement amendment is whether it will pass the public perception test. Conservation easements in Colorado are scrutinized by the public, and unsupported conservation easements could result in a rethinking of the viability of easements as a land protection tool. One high profile amendment perceived as giving up significant land protection could erode public confidence in CPW, lead to	S1v	Comment noted.

Comment(s)

S1 | **Colorado Parks and Wildlife (cont.)**

S1v legislative changes, and diminish wildlife habitat protection efforts by CPW. Further, an objectionable amendment exposes CPW to lawsuits by interested community members which may result in questionable case law that governs conservation easement amendments thereafter.

Conservation easement amendments are among the most hotly discussed issues in the conservation community and we believe Colorado is ripe for legislation and case law to direct and govern easement amendments. This risk is looming should an amendment to the Tuttle Conservation Easement be viewed negatively by the public.

S1w I have met with the landowner of the Tuttle property to discuss this transmission line routing. The landowner conveyed to me that he opposes transmission lines over this property, and would not favor any conservation easement amendment allowing them. Both CPW and the landowner oppose this routing alternative and oppose any placement that would have the negative impact on the conservation values that would be created by these lines on the Tuttle Conservation Easement property.

Your three agencies, BLM, NPS, and USFWS, have great influence and authority in the siting of these transmission lines. We have cooperated with you in defining the overall corridor across NW Colorado. As a cooperating agency and state partner, we urge that whether it is one – or all three transmission lines – they are routed in a way that bypasses the Tuttle Easement and helps us protect its conservation values. Colorado Parks and Wildlife appreciates the opportunity to provide these recommendations for inclusion in your analysis of the alternative routes for siting of these major transmission lines.

Sincerely,

Rick D. Cables

Rick D. Cables
Director

CC: Rex Tuttle
TransWest Express LLC
Zephyr Transmission Line, Duke America
Gateway South Transmission Line, Rocky Mountain Power
Lise Aangeenbrug, Executive Director, GOCO
Tim Monahan, First Assistant Attorney General

Attachment: Biological Description of the Tuttle Conservation Easement

Response(s)

S1w Comment and route preference noted.

Comment(s)

Response(s)

S1 **Colorado Parks and Wildlife (cont.)**

Attachment: Biological Description of the Tuttle Conservation Easement

The Tuttle Conservation Easement encumbers approximately 15,076 acres of land in Moffat County with habitat protections in perpetuity. The conservation easement borders U.S. Highway 40 on the south for a span of approximately 5 miles. Location maps for the Tuttle Ranch are provided as Figures 1 and 2 below. The Tuttle Easement was purchased by CPW to protect habitat for greater sage-grouse (GrSG), big game, white-tailed prairie dogs (WTPD) and as a place for reintroduction of a new population of black-footed ferrets (BFF) within the existing 10-J rule (experimental, non-essential) area.

Greater Sage-grouse:

S1x

GrSG are common year-round across the property, although a portion of the sagebrush has burned in recent years and does not support the amount of nesting habitat that it did 10 years ago. GrSG that occupy the Tuttle Easement are part of the Northwest Colorado population. This is the largest of six populations of GrSG in Colorado and includes approximately 2/3 of the state's GrSG. Figure 3 shows the location of GrSG populations in Colorado. Due to its size, the Northwest Colorado population is subdivided into 10 Management Zones. The Tuttle Easement occurs along the western side of Management Zone 5 (in Figure 3…south of Highway 40 where the highway takes a decided bend to the south). While occupied year-round by GrSG, birds do not occupy the Tuttle Easement at high density, compared to areas to the northeast, east and west.

The Tuttle Easement contains extensive areas of high quality GrSG nesting and brood-rearing habitat. Representative photos of GrSG habitat on the Tuttle Easement are included below as Figures 4 through 6. Figure 6 also shows the alignment of the existing transmission lines across the property. One small lek occurs in the southern third of the property (Fig. 2). Another small lek sits immediately east of the property on the Crooked Wash ranch. Neither is located within 0.6 miles of the proposed power line route. However, both leks fall within 4 miles of the proposed power line route, so nesting habitat associated with both leks would be affected by a power line route in this location. While the density of GrSG on the Tuttle property is relatively low compared to other portions of the Northwest Colorado population, the property provides an important linkage between key areas of Priority Habitat from Axial Basin in the east to Blue Mountain in the west.

CPW developed Priority Habitat maps in 2012 for BLM's use in the GrSG EIS process (Fig 7.). Most of the Tuttle property is mapped by CPW as Priority Habitat for GrSG. The actual portion of the easement crossed by the proposed power lines is mapped as General Habitat, but the proposed routes would cross extensive Priority Habitat on either side of the easement. Priority Habitat includes the most important seasonal habitats for the long-term conservation of GrSG, including key linkage areas within and between populations. General Habitat includes all other occupied GrSG habitat in Colorado.

In the immediate vicinity of the Tuttle Easement (i.e., that area from the south end of Cross Mountain west along Highway 40 past the west edge of the Easement) the relative value of the habitat on the easement is of higher quality and contains a higher number of birds than habitat located north of Highway 40. GrSG habitat

1

S1x

See response to Comment S1j.

Impacts on sage-grouse priority habitats are analyzed in Section 3.2.8.5. This section also addressed management zones in Northwest Colorado. Relevant elements of the biological description have been incorporated into Section 3.2.8.5.4.

Comment(s)

Response(s)

S1 | **Colorado Parks and Wildlife (cont.)**

S1x south of Highway 40 extends nearly to Highway 64, a distance of more than 20 miles. GrSG habitat north of Highway 40 is constrained topographically (Cross Mountain, Yampa River and associated bluffs), by conversion of sagebrush areas to dryland agriculture on Twelvemile Mesa, and by a significantly greater presence of pinyon-juniper woodlands, which restricts or precludes GrSG occupancy. Suitable habitat extends less than 5 miles to the north of the highway. GrSG habitat south of Highway 40 is also of greater value to the long-term conservation of GrSG than other habitats simply because it is protected from development in perpetuity. None of the surrounding habitat on private, State, or BLM land is currently protected to any significant degree (although the future completion of a conservation easement on the Crooked Wash Ranch will improve this situation). The USFWS, in the 2010 Warranted but Precluded listing decision for GrSG, cited the lack of sufficient regulatory mechanisms (regulatory certainty) for protection of GrSG. CPW currently has only two programs which meet the USFWS standard of regulatory certainty: 1) the regulatory control exercised by the Parks and Wildlife Commission over hunting seasons, and 2) the in-perpetuity protections provided to GrSG habitat under our conservation easement program.

S1y **Elk and Mule Deer:**

The Tuttle property provides exceptionally significant winter range for elk and mule deer. Depending on the year, as many as 7,000 to 10,000 elk can be found on or near the property in the heart of the winter. These elk come from the two of the largest herds in Colorado (E-2 Bears Ears and E-6 White River). Collectively, these herds are a significant economic and recreational driver for the entire region and provide a disproportionate share of CPW license revenue. Mule deer also concentrate on the property. Large wildfires surrounding the property make the remaining sagebrush on the Tuttle property of key importance to wintering mule deer in many years. As with GrSG, habitat south of Highway 40 in the vicinity of the Tuttle Easement is of substantially higher value for wintering big game than adjacent habitats to the north of the highway. The largest wintering bands are almost always located south of Highway 40.

S1z **White-tailed Prairie Dog/Black-footed Ferret:**

When the then Colorado Division of Wildlife began looking for suitable black-footed ferret release sites in the early 1990s, the Tuttle property contained some of the highest density WTPD colonies anywhere in northwestern Colorado. It would have been a preferred site for the original releases of ferrets had an agreement with the landowner been in place at the time. WTPD continued to be very common on the property when the easement process began in 2010. This density of prairie dogs made the property a key site for conservation of WTPD and for eventual release of BFF, which is stipulated in the easement. The entire Tuttle Easement is included within the existing 10-J Rule area (experimental, non-essential) in which release of BFF is permitted. USFWS contributed approximately $500,000 toward the purchase of this easement. These funds came from the non-traditional Section 6 fund for conservation of federally listed species (BFF in this instance). Release of ferrets on the property is on hold as WTPD colonies on the property suffered a plague epizootic in 2011-12, resulting in a severe loss of population. Distribution and density of WTPD colonies in the vicinity of the Tuttle Easement is substantially greater south of Highway 40 than north of Highway 40. As with GrSG, WTPD

S1y Comment and route preference noted. Relevant elements of the biological description have been incorporated into Sections 3.2.7.5.4.

S1z Comment and route preference noted. Relevant elements of the biological description have been incorporated into Sections 3.2.8.5.4.

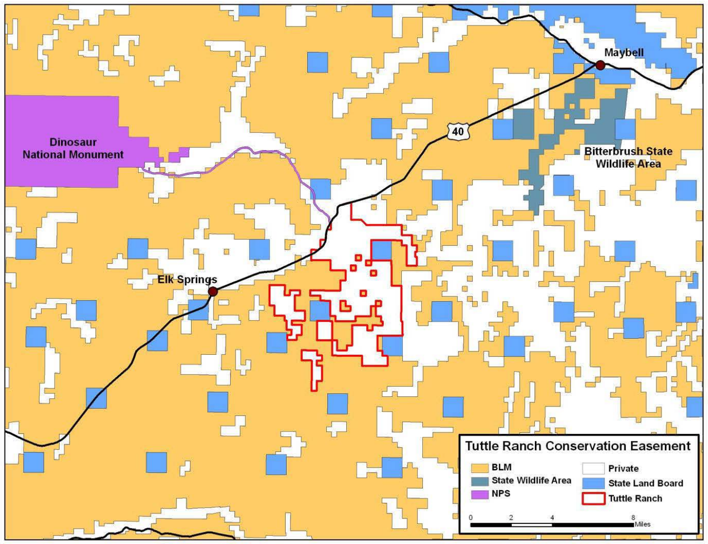
Comment(s)

Response(s)

S1 **Colorado Parks and Wildlife (cont.)**

S1z distribution and density north of Highway 40 are constrained by topography, production agriculture, and pinyon-juniper woodlands. Most importantly, the opportunity to actively manage for high populations of WTPD capable of supporting BFF reintroduction is only possible on the Tuttle Easement by the agreements with the landowner that are contained in the Easement. Even if WTPD/BFF habitat north of Highway 40 was equal in value, active management for these species would be precluded because the landowner agreements necessary for implementation do not exist on private lands outside the easement boundary.

Figure 1. Overview map of the Tuttle Ranch


Maybell
40
Dinosaur National Monument
Bitterbrush State Wildlife Area
Elk Springs
Tuttle Ranch Conservation Easement
BLM
State Wildlife Area
NPS
Private
State Land Board
Tuttle Ranch
0
2
4
8
Miles

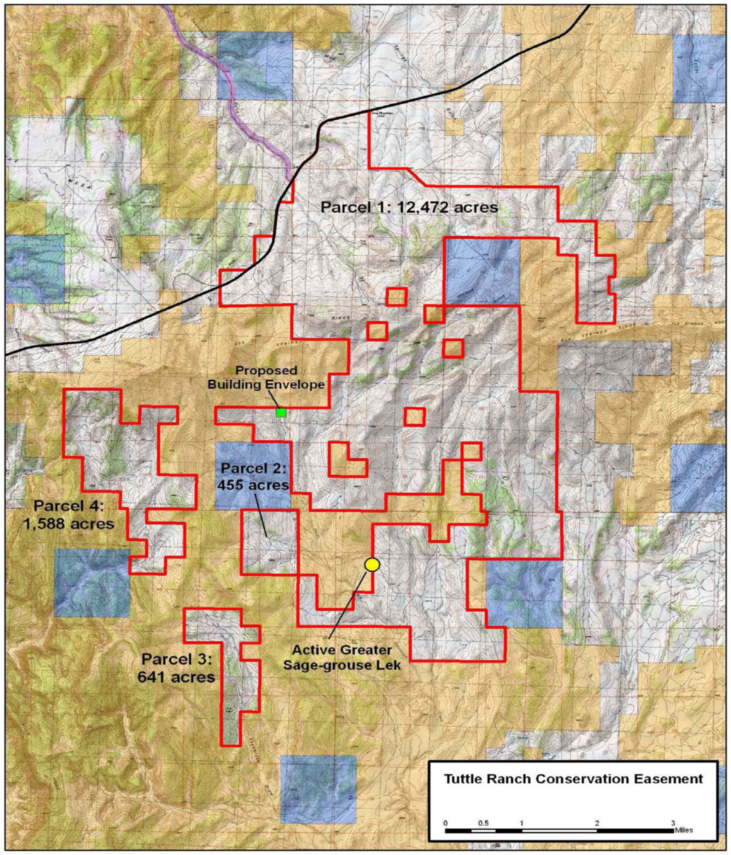
Comment(s)

Response(s)

S1

Colorado Parks and Wildlife (cont.)

Figure 2. Close-up map of the Tuttle Ranch



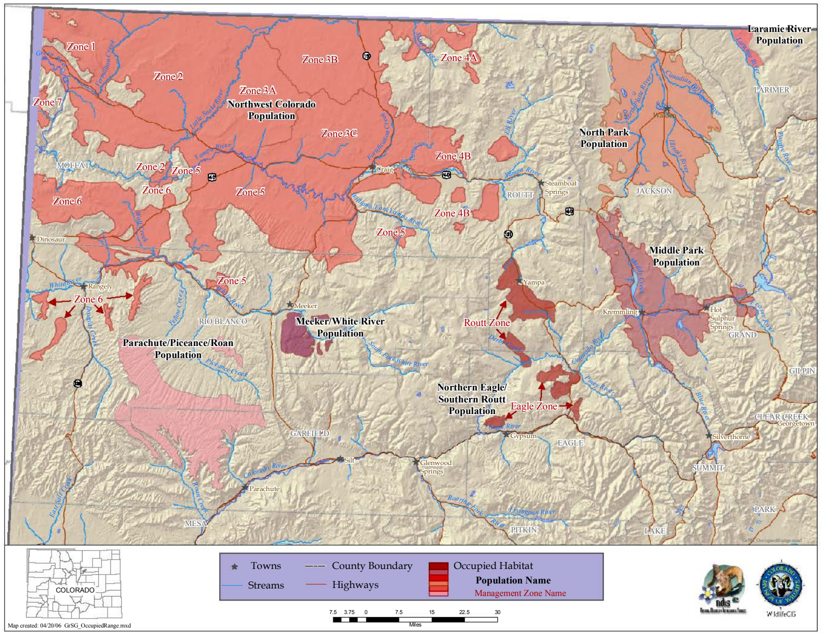
4

Comment(s)

Response(s)

S1 | **Colorado Parks and Wildlife (cont.)**

Figure 3. GrSG populations in Colorado



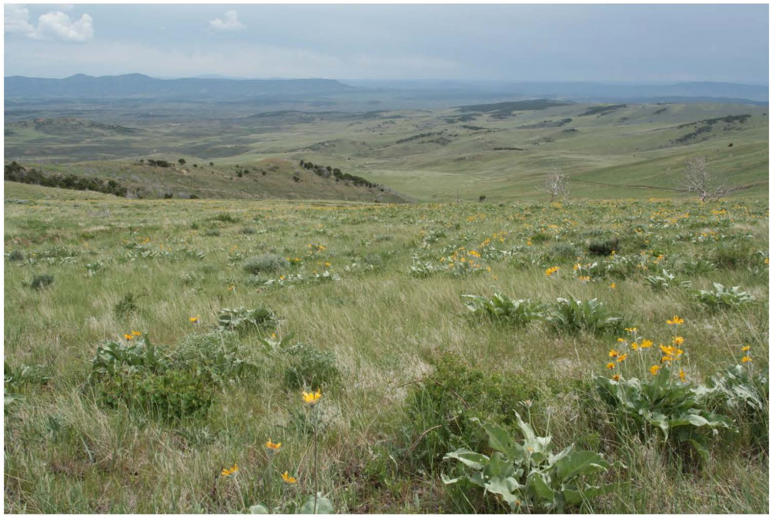
5

Comment(s)

Response(s)

S1 **Colorado Parks and Wildlife (cont.)**

Figure 4. Representative GrSG habitat on the Tuttle Easement

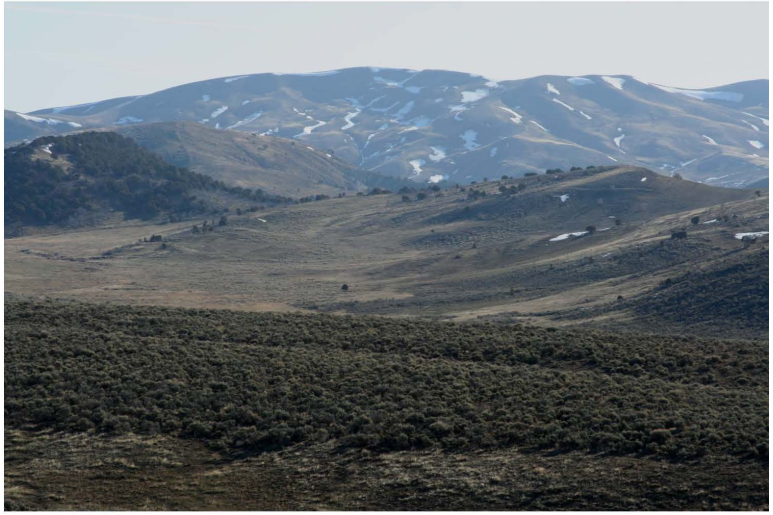


Comment(s)

Response(s)

S1 **Colorado Parks and Wildlife (cont.)**

Figure 5. Representative GrSG habitat on the Tuttle Easement



Comment(s)

Response(s)

S1 | **Colorado Parks and Wildlife (cont.)**

Figure 6. Representative GrSG habitat on the Tuttle Easement

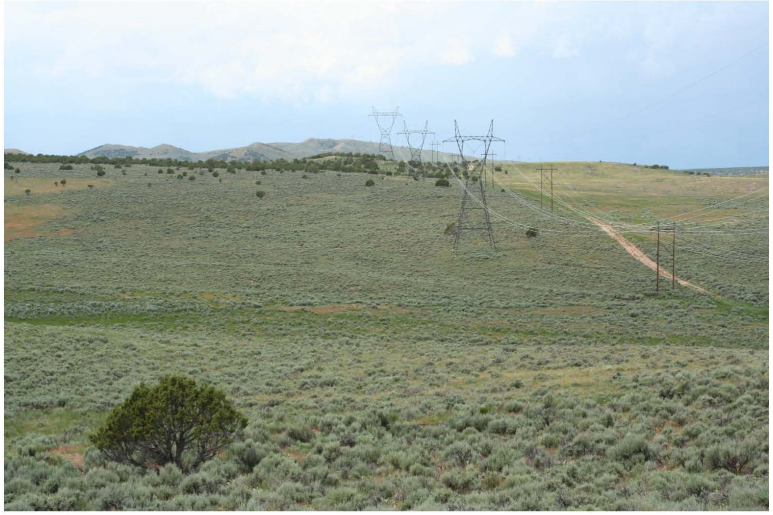
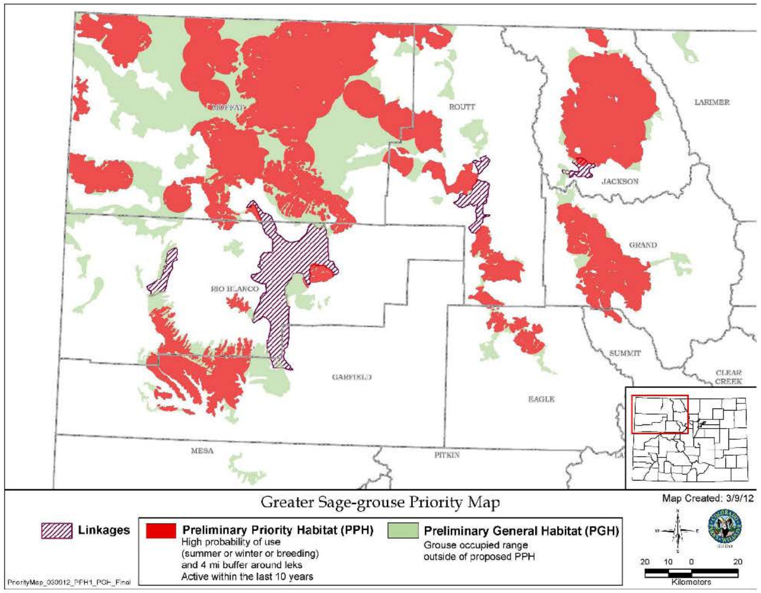


Figure 7. GrSG priority habitat in Colorado

Comment(s)

S1 **Colorado Parks and Wildlife (cont.)**


MOFFAT
ROUTT
LARIMER
JACKSON
GRAND
RIO BLANCO
GARFIELD
EAGLE
SUMMIT
CLEAR CREEK
MESA
PITKIN
Greater Sage-grouse Priority Map
Map Created: 3/9/12
▨ Linkages
🟥 Preliminary Priority Habitat (PPH)
High probability of use
(summer or winter or breeding)
and 4 mi buffer around leks
Active within the last 10 years
🟩 Preliminary General Habitat (PGH)
Grouse occupied range
outside of proposed PPH
20 10 0 20
Kilometers
PriorityMap_030912_PPH1_PGH_Final

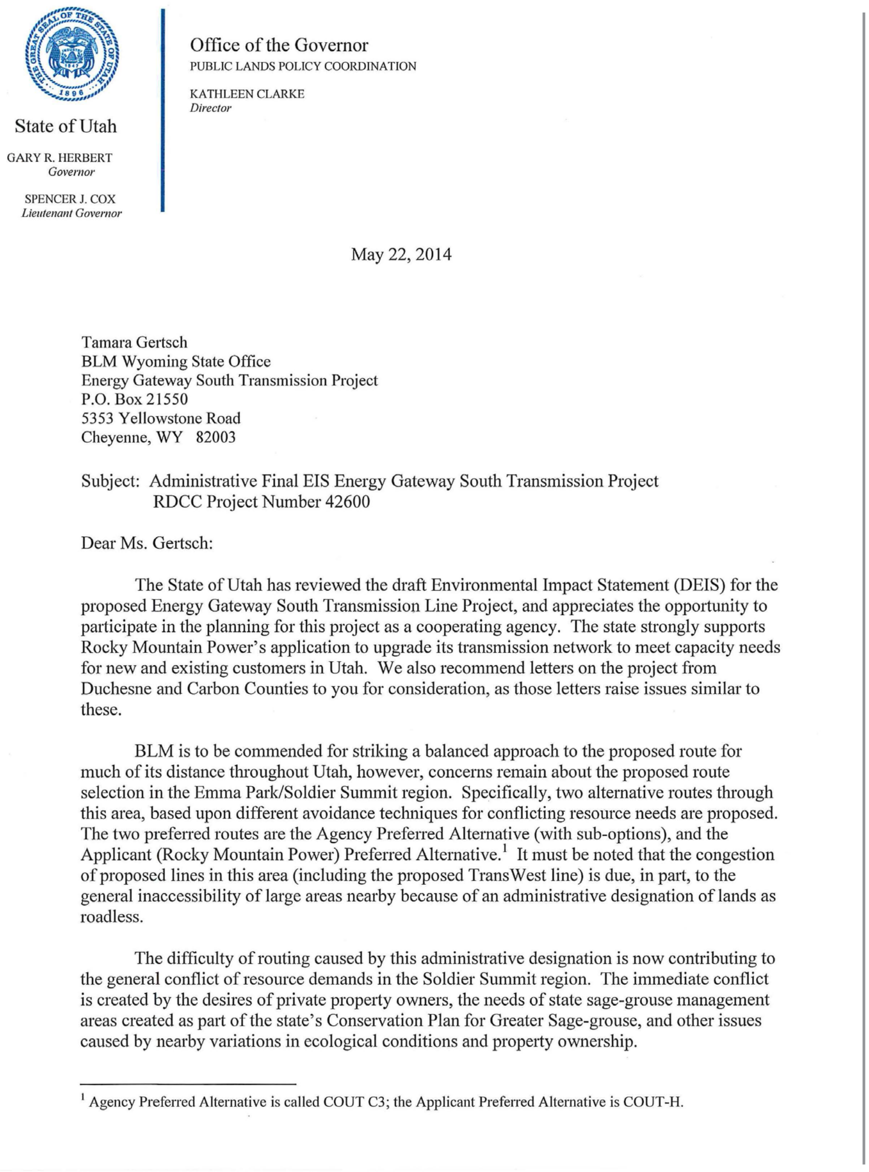
Response(s)

Comment(s)

Response(s)

S2

Utah Public Lands Policy Coordination



State of Utah
GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Office of the Governor
PUBLIC LANDS POLICY COORDINATION

KATHLEEN CLARKE
Director

May 22, 2014

Tamara Gertsch
BLM Wyoming State Office
Energy Gateway South Transmission Project
P.O. Box 21550
5353 Yellowstone Road
Cheyenne, WY 82003

Subject: Administrative Final EIS Energy Gateway South Transmission Project
RDCC Project Number 42600

Dear Ms. Gertsch:

The State of Utah has reviewed the draft Environmental Impact Statement (DEIS) for the proposed Energy Gateway South Transmission Line Project, and appreciates the opportunity to participate in the planning for this project as a cooperating agency. The state strongly supports Rocky Mountain Power's application to upgrade its transmission network to meet capacity needs for new and existing customers in Utah. We also recommend letters on the project from Duchesne and Carbon Counties to you for consideration, as those letters raise issues similar to these.

BLM is to be commended for striking a balanced approach to the proposed route for much of its distance throughout Utah, however, concerns remain about the proposed route selection in the Emma Park/Soldier Summit region. Specifically, two alternative routes through this area, based upon different avoidance techniques for conflicting resource needs are proposed. The two preferred routes are the Agency Preferred Alternative (with sub-options), and the Applicant (Rocky Mountain Power) Preferred Alternative.[1] It must be noted that the congestion of proposed lines in this area (including the proposed TransWest line) is due, in part, to the general inaccessibility of large areas nearby because of an administrative designation of lands as roadless.

The difficulty of routing caused by this administrative designation is now contributing to the general conflict of resource demands in the Soldier Summit region. The immediate conflict is created by the desires of private property owners, the needs of state sage-grouse management areas created as part of the state's Conservation Plan for Greater Sage-grouse, and other issues caused by nearby variations in ecological conditions and property ownership.

---

[1] Agency Preferred Alternative is called COUT C3; the Applicant Preferred Alternative is COUT-H.

Comment(s)

S2 **Utah Public Lands Policy Coordination (cont.)**

S2a In general, the state supports the siting of large infrastructure, like the proposed transmission project, upon federal rather than private land, unless the private landowners are willing to allow the construction. This support includes avoiding use of land managed by the state's School and Institutional Trust Lands Administration (SITLA) if the primary use of the SITLA land is not for infrastructure purposes. In this case, many private landowners in the area are upset with the proposed routing, especially in light of similar routing proposed for the TransWest Express line, because the proposal has the potential for severely affecting the value of land in the area. Additionally, SITLA has plans to sell property in the area.[2]

S2b Further, the state has developed and is implementing a comprehensive Conservation Plan for greater sage-grouse in Utah,[3] and has asked the BLM and the U.S. Forest Service to be a partner in the implementation of the plan. The plan establishes eleven Sage-grouse Management Areas (SGMAs) in Utah as focal points for conservation efforts, and the Carbon SGMA, is one of them. The Agency Preferred Alternative passes to the north of the identified boundaries of the Carbon SGMA, with the exception of a several mile stretch in the northwest corner. The proposed route is several miles away from any known sage-grouse lek locations within the SGMA. Unfortunately, this proposed route also increases exposure to the private and SITLA lands.

S2c The state's Conservation Plan anticipates avoidance of SGMAs as the first choice for management, but does provide for mitigation options should avoidance not be possible. In this case, a detailed look at the actual habitat mapped within the Carbon SGMA reveals a band of non-habitat within the SGMA, which non-habitat could be used for the power line. This band of non-habitat could be accessed by crossing no more of the habitat within the SGMA than the Agency Preferred Alternative, at even greater distances from the known leks. The state requests the BLM revisit the analysis of effects in this region, and consider working with the state to find a variation on the proposed applicant requested route which will make use of this non-habitat, and otherwise employ the terms of the state's Conservation Plan to develop appropriate and effective mitigation measures for construction of the transmission line.

S2d In addition, the Applicant Preferred Alternative (or the above suggested variation), as mapped, would cross the UDWR Gordon Creek Wildlife Management Area (WMA) along with two conservation easements along the San Pitch River. The WMA provides crucial mule deer winter range and the conservation easements provide protection for the Columbia spotted frog, a state species of concern. The route for the transmission line should avoid these areas if possible. If impacts cannot be avoided, UDWR recommends no construction activities from December 1 to April 15 within crucial mule deer range. Finally, the applicant must contact UDWR for Rights-of-Way across these areas.

S2e The Agency Preferred Alternative may impact mineral rights leased by the School and Institutional Trust Lands Administration (SITLA) in the Natural Buttes[4] and the Argyle Ridge[5]

---

[2] The design of SITLA timber sales has been made with consideration to cabin development and related infrastructure.
[3] See https://wildlife.utah.gov/uplandgame/sage-grouse/pdf/greater_sage_grouse_plan.pdf, accessed May 13, 2014.
[4] Oil shale mineral rights within T9S, R22E and T9E, R21E SLB&M.
[5] Coal mineral rights within T11S, R11E; T11S, R10E; T11S, R9E; and T11S, R8E, SLB&M.

Response(s)

S2a Alternative route comparison for land jurisdiction is included in Table 2-16 and Section 3.2.11. The majority of all alternative routes and route variations cross land administered by the BLM and efforts have been made to site alternative routes and route variations in federally designated utility corridors to the extent possible (i.e., where suitable when reviewing for environmental, geographic, or engineering/electric system reliability concerns).

Alternative route development occurred through study and review activities conducted in four stages (as discussed in Chapter 2), including: feasibility studies, agency review of the preliminary alternative routes, public review and comment on the preliminary alternative routes, and review of alternative routes through environmental studies.

As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Additional description has been added to Section 3.2.22 indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights or easements required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process.

S2b The BLM acknowledges the Conservation Plan for Greater Sage-Grouse in Utah in Section 3.2.8.1 and Appendix J. Impacts on designated sage-grouse management areas are discussed in Section 3.2.8.5. The analysis found that the Project would be consistent with the Conservation Plan for Greater Sage-Grouse in Utah.

S2c See response to Comment S2b.

S2d The Gordon Creek WMA is addressed in Section 3.2.15. The two conservation easements located near the Sanpitch River (the Nuttall Farms and Crawford Farms conservation easements) have been incorporated into the Final EIS (refer to Section 3.2.15). Potential impacts on the biological resources that may occur in these conservation easements, such as crucial mule deer winter range and the Columbia spotted frog, are discussed in Sections 3.2.7 and 3.2.8.

S2e The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing that the Applicant must acquire all access permissions for lands outside of their jurisdiction. Regardless of the alternative route selected by the BLM, the BLM understands if a portion of the route is located on property owned or controlled by Utah State Institutional Trust Lands Administration (SITLA), the Applicant would independently negotiate with SITLA to microsite the line and acquire land-use rights so the interests and needs of both the Applicant and SITLA are reasonably addressed.

S2 **Utah Public Lands Policy Coordination (cont.)**

S2e area. The proposed transmission line must not prohibit new roads, ROW and/or pipelines that will be necessary to develop the SITLA leases.

Please direct any other written questions regarding this correspondence to the Public Lands Policy Coordination Office at the address below, or call John Harja at (801) 537-9802 or Sindy Smith at (801) 537-9193.

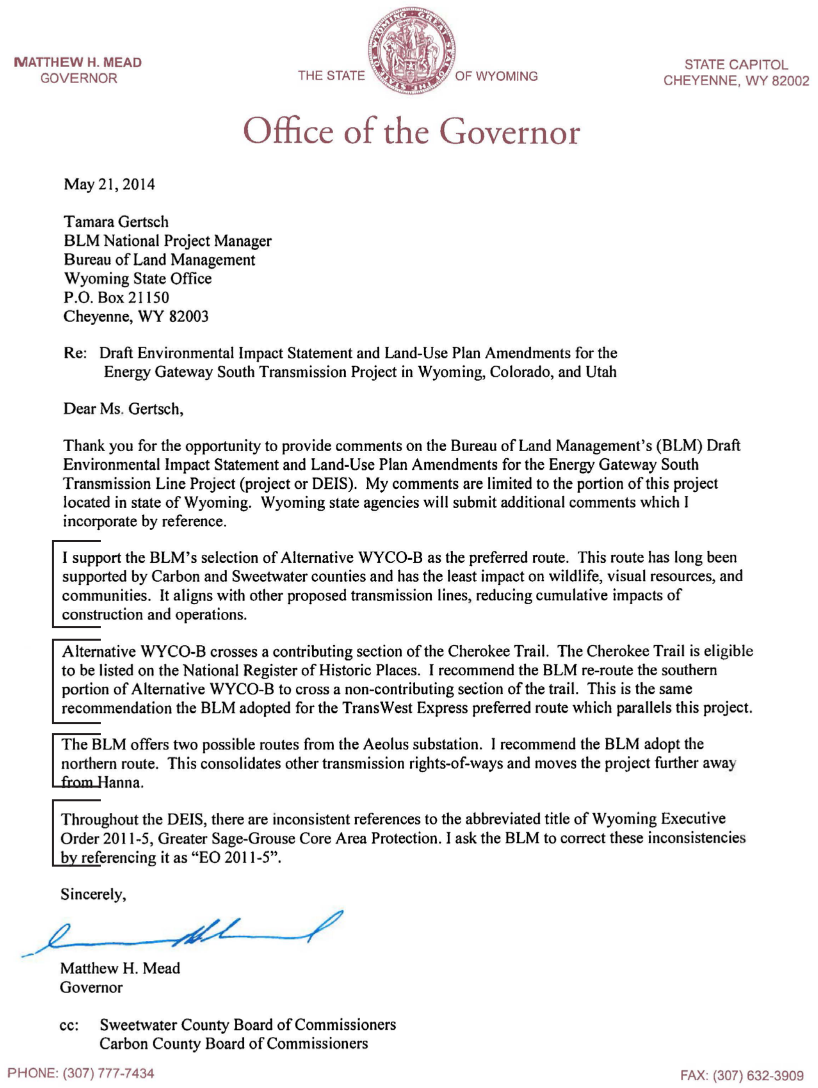
Sincerely,

Kathleen Clarke
Director

CC: Juan Palma

Comment(s)

S3 **State of Wyoming – Governor's Office**



MATTHEW H. MEAD
GOVERNOR

THE STATE OF WYOMING

STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

May 21, 2014

Tamara Gertsch
BLM National Project Manager
Bureau of Land Management
Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Re: Draft Environmental Impact Statement and Land-Use Plan Amendments for the Energy Gateway South Transmission Project in Wyoming, Colorado, and Utah

Dear Ms. Gertsch,

Thank you for the opportunity to provide comments on the Bureau of Land Management's (BLM) Draft Environmental Impact Statement and Land-Use Plan Amendments for the Energy Gateway South Transmission Line Project (project or DEIS). My comments are limited to the portion of this project located in state of Wyoming. Wyoming state agencies will submit additional comments which I incorporate by reference.

S3a I support the BLM's selection of Alternative WYCO-B as the preferred route. This route has long been supported by Carbon and Sweetwater counties and has the least impact on wildlife, visual resources, and communities. It aligns with other proposed transmission lines, reducing cumulative impacts of construction and operations.

S3b Alternative WYCO-B crosses a contributing section of the Cherokee Trail. The Cherokee Trail is eligible to be listed on the National Register of Historic Places. I recommend the BLM re-route the southern portion of Alternative WYCO-B to cross a non-contributing section of the trail. This is the same recommendation the BLM adopted for the TransWest Express preferred route which parallels this project.

S3c The BLM offers two possible routes from the Aeolus substation. I recommend the BLM adopt the northern route. This consolidates other transmission rights-of-ways and moves the project further away from Hanna.

S3d Throughout the DEIS, there are inconsistent references to the abbreviated title of Wyoming Executive Order 2011-5, Greater Sage-Grouse Core Area Protection. I ask the BLM to correct these inconsistencies by referencing it as "EO 2011-5".

Sincerely,

Matthew H. Mead
Governor

cc: Sweetwater County Board of Commissioners
Carbon County Board of Commissioners

PHONE: (307) 777-7434 FAX: (307) 632-3909

Response(s)

S3a Comment and route preference noted.

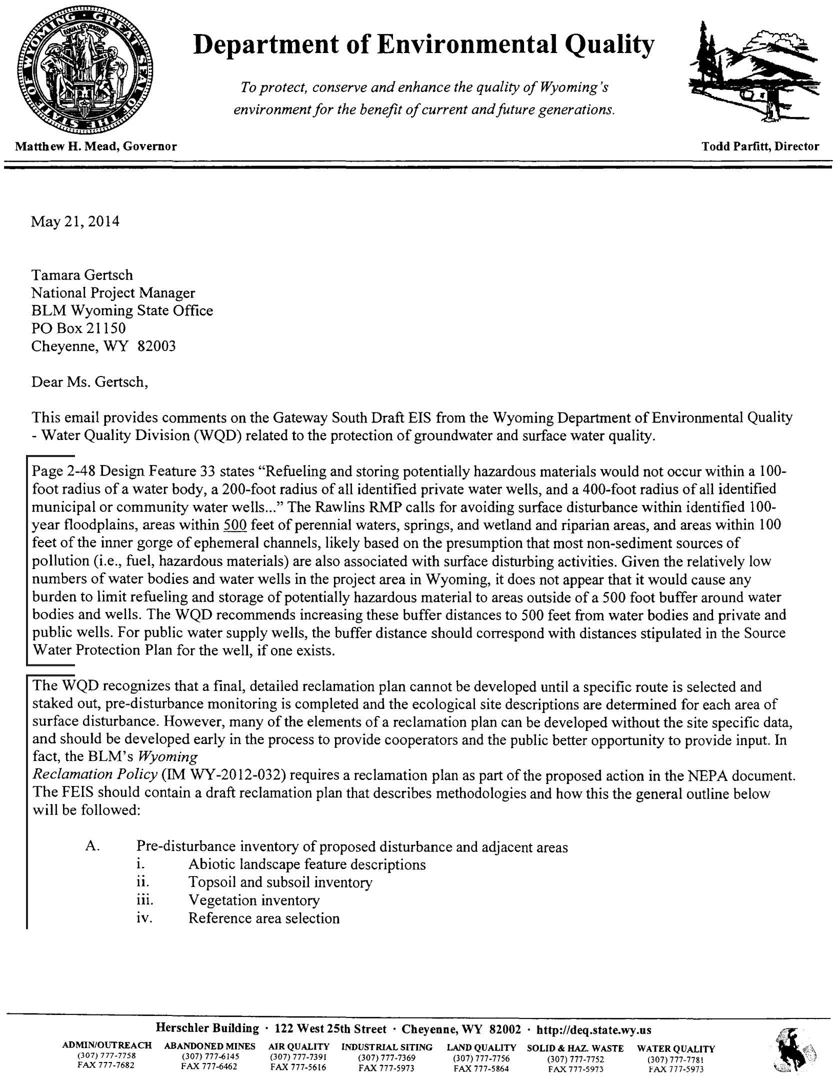
S3b Through coordination with the BLM Rawlins Field Office, Alternative WYCO-B was rerouted to cross a non-contributing segment of the Cherokee Trail. This trail crossing is in the same location adopted by the BLM for the TransWest Express transmission project. The analysis in the Final EIS reflects this route revision.

S3c Comment and route preference noted.

S3d The recommended change has been made in the Final EIS.

Comment(s)

S4 Wyoming Department of Environmental Quality



Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor **Todd Parfitt, Director**

May 21, 2014

Tamara Gertsch
National Project Manager
BLM Wyoming State Office
PO Box 21150
Cheyenne, WY 82003

Dear Ms. Gertsch,

This email provides comments on the Gateway South Draft EIS from the Wyoming Department of Environmental Quality - Water Quality Division (WQD) related to the protection of groundwater and surface water quality.

S4a Page 2-48 Design Feature 33 states "Refueling and storing potentially hazardous materials would not occur within a 100-foot radius of a water body, a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water wells..." The Rawlins RMP calls for avoiding surface disturbance within identified 100-year floodplains, areas within 500 feet of perennial waters, springs, and wetland and riparian areas, and areas within 100 feet of the inner gorge of ephemeral channels, likely based on the presumption that most non-sediment sources of pollution (i.e., fuel, hazardous materials) are also associated with surface disturbing activities. Given the relatively low numbers of water bodies and water wells in the project area in Wyoming, it does not appear that it would cause any burden to limit refueling and storage of potentially hazardous material to areas outside of a 500 foot buffer around water bodies and wells. The WQD recommends increasing these buffer distances to 500 feet from water bodies and private and public wells. For public water supply wells, the buffer distance should correspond with distances stipulated in the Source Water Protection Plan for the well, if one exists.

S4b The WQD recognizes that a final, detailed reclamation plan cannot be developed until a specific route is selected and staked out, pre-disturbance monitoring is completed and the ecological site descriptions are determined for each area of surface disturbance. However, many of the elements of a reclamation plan can be developed without the site specific data, and should be developed early in the process to provide cooperators and the public better opportunity to provide input. In fact, the BLM's *Wyoming Reclamation Policy* (IM WY-2012-032) requires a reclamation plan as part of the proposed action in the NEPA document. The FEIS should contain a draft reclamation plan that describes methodologies and how this the general outline below will be followed:

A. Pre-disturbance inventory of proposed disturbance and adjacent areas
  i. Abiotic landscape feature descriptions
  ii. Topsoil and subsoil inventory
  iii. Vegetation inventory
  iv. Reference area selection

Response(s)

S4a Comment noted. Design Feature 33 has been revised to conform with the stipulations contained in the BLM Rawlins RMP for portions of the Project in Wyoming.

S4b The POD will include a Noxious Weed Management Plan (to be developed in coordination with cooperating agencies and finalized for the selected route before construction may proceed) that includes noxious weed control measures in accordance with existing regulations and BLM and U.S. Forest Service (USFS) requirements. Control measures will be based on species-specific and site-specific conditions (e.g., proximity to water or riparian areas, agricultural areas, and season) and will be coordinated with the BLM or USFS Authorized Officer or his/her designated representative, Project Managers, the Compliance Inspection Contractor, and the Construction Contractor's weed management specialist. Further, the Noxious Weed Management Plan will be based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 and Forest Service Noxious Weed Management Manual 2080. Preconstruction surveys will be conducted for the selected route to be used by the agencies to refine the mitigation requirements and further inform the POD.

Comment(s)

S4 | **Wyoming Department of Environmental Quality (cont.)**

S4b

B. Invasive plant management plan for construction and reclamation activities
C. Develop a reclamation plan
  i. Site preparation, surface stability and soil management
  ii. Suitable soil stockpiling management
  iii. Description of soil amendments
  iv. Seeding methods
  v. Seed mixes
  vi. Describe irrigation techniques, if irrigation is part of the reclamation plan
  vii. Describe best management practices
  viii. Monitoring and reporting protocols

There are two additional WQD requirements that are likely to apply to the Wyoming portion of project that should be included in the DEIS:

S4c

Temporary Turbidity Variance. Wyoming has turbidity criteria for waters designated as fisheries or drinking water supplies. Any type of construction activity within these streams is likely to result in exceedences of these criteria. However, in accordance with Section 23(c)(2) of the Chapter 1 Surface Water Quality Standards, the administrator of the Water Quality Division may authorize temporary increases in turbidity above the numeric criteria in Section 23 (a) of the Standards in response to an individual application for a specific activity. While it is not required to get this authorization, this project has the potential to exceed the turbidity criteria and a variance is recommended. An application must be submitted and a variance approved by the administrator before any temporary increase in turbidity above the numeric limits takes place. This process generally takes about 30 days. Please contact Catherine Norris at 307-777-6372 for more information.

S4d

Spill Reporting. Chapter 4 of the WDEQ Water Quality Rules and Regulations requires that the WQD be notified of spills or releases of chemicals and petroleum products. The FEIS, ROD and Spill Pollution Prevention, Containment, and Countermeasures Plan should reiterate this and explain how soils, groundwater and surface water impacted by spills, leaks and releases of chemicals, petroleum products and produced water will be restored.

If you have any questions regarding these comments, please contact Mark Conrad, WQD NEPA Coordinator at mark.conrad@wyo.gov or 307-777-5802.

Sincerely,

Kevin Frederick
Water Quality Division Administrator
Wyoming Department of Environmental Quality

KF/MAC/rm/14-0447

Ec:
Todd Parfitt, DEQ Director
Mark Conrad, WQD
Brian Lovett, ADM
David Waterstreet, WQD
Colin McKee, Office of Governor Matthew Mead

Response(s)

S4c

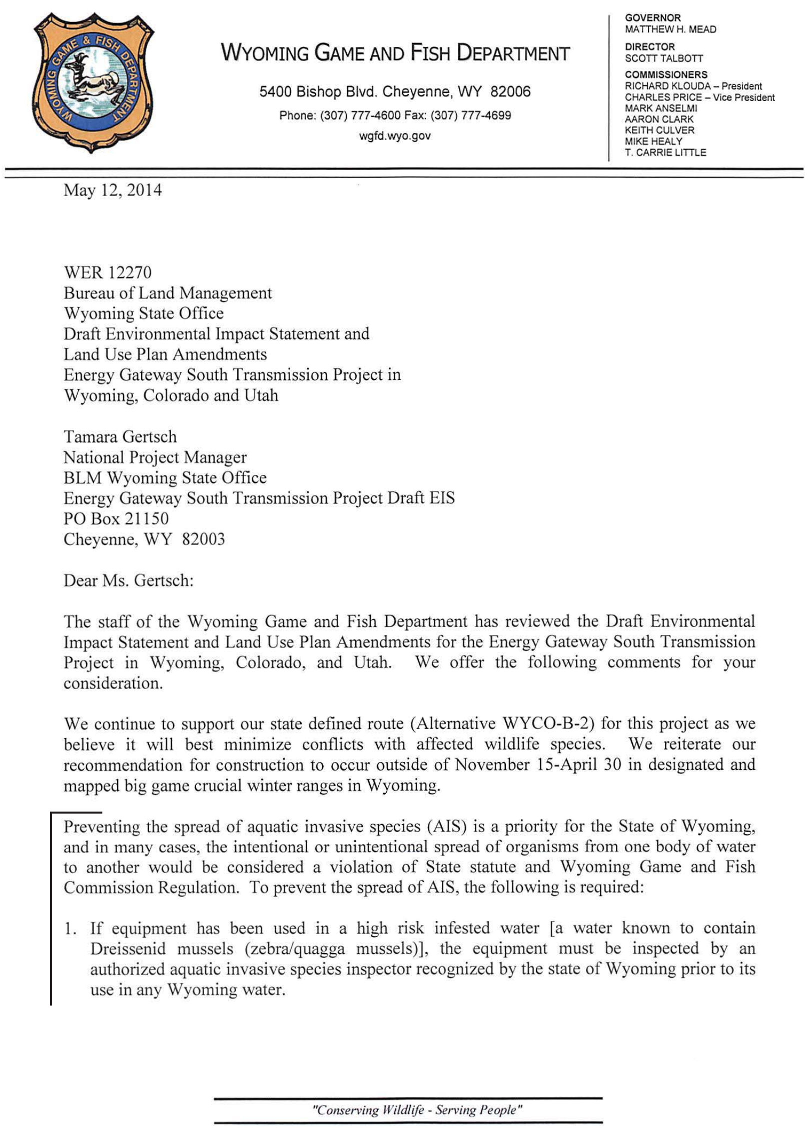
Comment noted. Any required state permits will be obtained prior to construction. Protocols for obtaining a variance for turbidity through the Wyoming Department of Environmental Quality will be included in the Project POD. Description of the Surface Water Quality Standards document has been bolstered in the Regulatory Framework subsection of the water resources section of Chapter 3 (Section 3.2.4).

S4d

This level of information would be developed and included in the POD.

Comment(s)

S5 | **Wyoming Game and Fish Department**



WYOMING GAME AND FISH DEPARTMENT
5400 Bishop Blvd. Cheyenne, WY 82006
Phone: (307) 777-4600 Fax: (307) 777-4699
wgfd.wyo.gov

GOVERNOR
MATTHEW H. MEAD
DIRECTOR
SCOTT TALBOTT
COMMISSIONERS
RICHARD KLOUDA – President
CHARLES PRICE – Vice President
MARK ANSELMI
AARON CLARK
KEITH CULVER
MIKE HEALY
T. CARRIE LITTLE

May 12, 2014

WER 12270
Bureau of Land Management
Wyoming State Office
Draft Environmental Impact Statement and
Land Use Plan Amendments
Energy Gateway South Transmission Project in
Wyoming, Colorado and Utah

Tamara Gertsch
National Project Manager
BLM Wyoming State Office
Energy Gateway South Transmission Project Draft EIS
PO Box 21150
Cheyenne, WY 82003

Dear Ms. Gertsch:

The staff of the Wyoming Game and Fish Department has reviewed the Draft Environmental Impact Statement and Land Use Plan Amendments for the Energy Gateway South Transmission Project in Wyoming, Colorado, and Utah. We offer the following comments for your consideration.

We continue to support our state defined route (Alternative WYCO-B-2) for this project as we believe it will best minimize conflicts with affected wildlife species. We reiterate our recommendation for construction to occur outside of November 15-April 30 in designated and mapped big game crucial winter ranges in Wyoming.

S5a

Preventing the spread of aquatic invasive species (AIS) is a priority for the State of Wyoming, and in many cases, the intentional or unintentional spread of organisms from one body of water to another would be considered a violation of State statute and Wyoming Game and Fish Commission Regulation. To prevent the spread of AIS, the following is required:

1. If equipment has been used in a high risk infested water [a water known to contain Dreissenid mussels (zebra/quagga mussels)], the equipment must be inspected by an authorized aquatic invasive species inspector recognized by the state of Wyoming prior to its use in any Wyoming water.

"Conserving Wildlife - Serving People"

Response(s)

S5a

Comments noted. Per Design Feature 34 (refer to Table 2-8), the Applicant will adhere to interagency-developed methods for preventing the spread of aquatic invasive species. Specific requirements will be specified in the POD, to be developed in coordination with cooperating agencies (including the state of Wyoming) and finalized for the selected route before construction may proceed.

Comment(s)

Response(s)

S5 **Wyoming Game and Fish Department (cont.)**

Tamara Gertsch
May 12, 2014
Page 2 of 2 - WER 12270

S5a

2. Any equipment entering the state by land from March through November (regardless of where it was last used), must be inspected by an authorized aquatic invasive species inspector prior to its use in any Wyoming water

3. If aquatic invasive species are found, the equipment will need to be decontaminated by an authorized aquatic invasive species inspector.

4. Any time equipment is moved from one 4th level (8-digit Hydrological Unit Code) watershed to another within Wyoming, the following guidelines are recommended: DRAIN: Drain all water from watercraft, gear, equipment, and tanks. Leave wet compartments open to dry.
   CLEAN: Clean all plants, mud, and debris from vehicle, tanks, watercraft, and equipment.
   DRY: Dry everything thoroughly. In Wyoming, we recommend drying for 5 days in summer (June - August); 18 days in Spring (March - May) and Fall (September - November); or 3 days in Winter (December - February) when temperatures are at or below freezing.

*A list of high risk infested waters and locations in Wyoming to obtain an AIS inspection can be found at: wgfd.wyo.gov.

Thank you for the opportunity to comment. If you have any questions or concerns, please contact Rick Huber, Staff Aquatic Biologist, at 307-214-3421.

Sincerely,

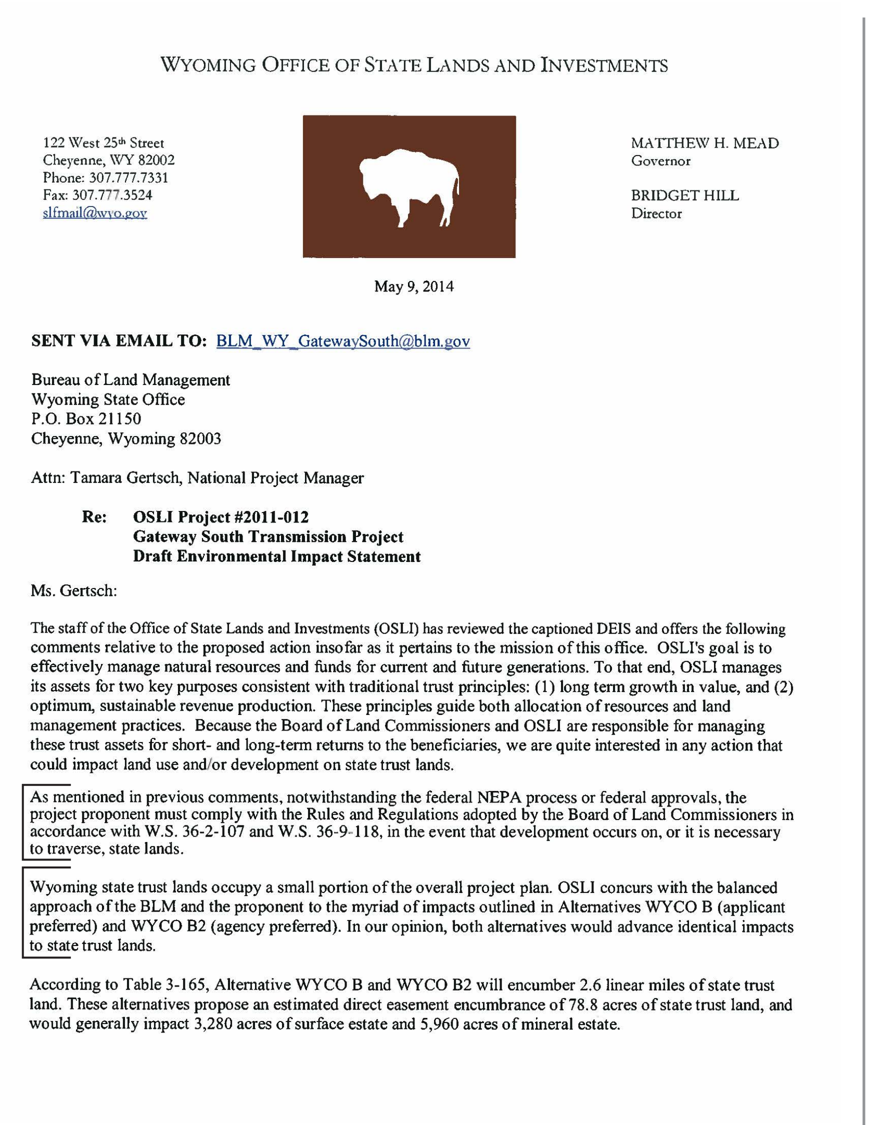
for Scott Gamo
Mark Konishi
Deputy Director

MK/mf/gb

cc: USFWS
Chris Wichmann – WDA, Cheyenne

Comment(s)

S6 **Wyoming Office of State Lands and Investments**



WYOMING OFFICE OF STATE LANDS AND INVESTMENTS

122 West 25th Street
Cheyenne, WY 82002
Phone: 307.777.7331
Fax: 307.777.3524
slfmail@wyo.gov

MATTHEW H. MEAD
Governor

BRIDGET HILL
Director

May 9, 2014

SENT VIA EMAIL TO: BLM_WY_GatewaySouth@blm.gov

Bureau of Land Management
Wyoming State Office
P.O. Box 21150
Cheyenne, Wyoming 82003

Attn: Tamara Gertsch, National Project Manager

Re: OSLI Project #2011-012
Gateway South Transmission Project
Draft Environmental Impact Statement

Ms. Gertsch:

The staff of the Office of State Lands and Investments (OSLI) has reviewed the captioned DEIS and offers the following comments relative to the proposed action insofar as it pertains to the mission of this office. OSLI's goal is to effectively manage natural resources and funds for current and future generations. To that end, OSLI manages its assets for two key purposes consistent with traditional trust principles: (1) long term growth in value, and (2) optimum, sustainable revenue production. These principles guide both allocation of resources and land management practices. Because the Board of Land Commissioners and OSLI are responsible for managing these trust assets for short- and long-term returns to the beneficiaries, we are quite interested in any action that could impact land use and/or development on state trust lands.

S6a As mentioned in previous comments, notwithstanding the federal NEPA process or federal approvals, the project proponent must comply with the Rules and Regulations adopted by the Board of Land Commissioners in accordance with W.S. 36-2-107 and W.S. 36-9-118, in the event that development occurs on, or it is necessary to traverse, state lands.

S6b Wyoming state trust lands occupy a small portion of the overall project plan. OSLI concurs with the balanced approach of the BLM and the proponent to the myriad of impacts outlined in Alternatives WYCO B (applicant preferred) and WYCO B2 (agency preferred). In our opinion, both alternatives would advance identical impacts to state trust lands.

According to Table 3-165, Alternative WYCO B and WYCO B2 will encumber 2.6 linear miles of state trust land. These alternatives propose an estimated direct easement encumbrance of 78.8 acres of state trust land, and would generally impact 3,280 acres of surface estate and 5,960 acres of mineral estate.

Response(s)

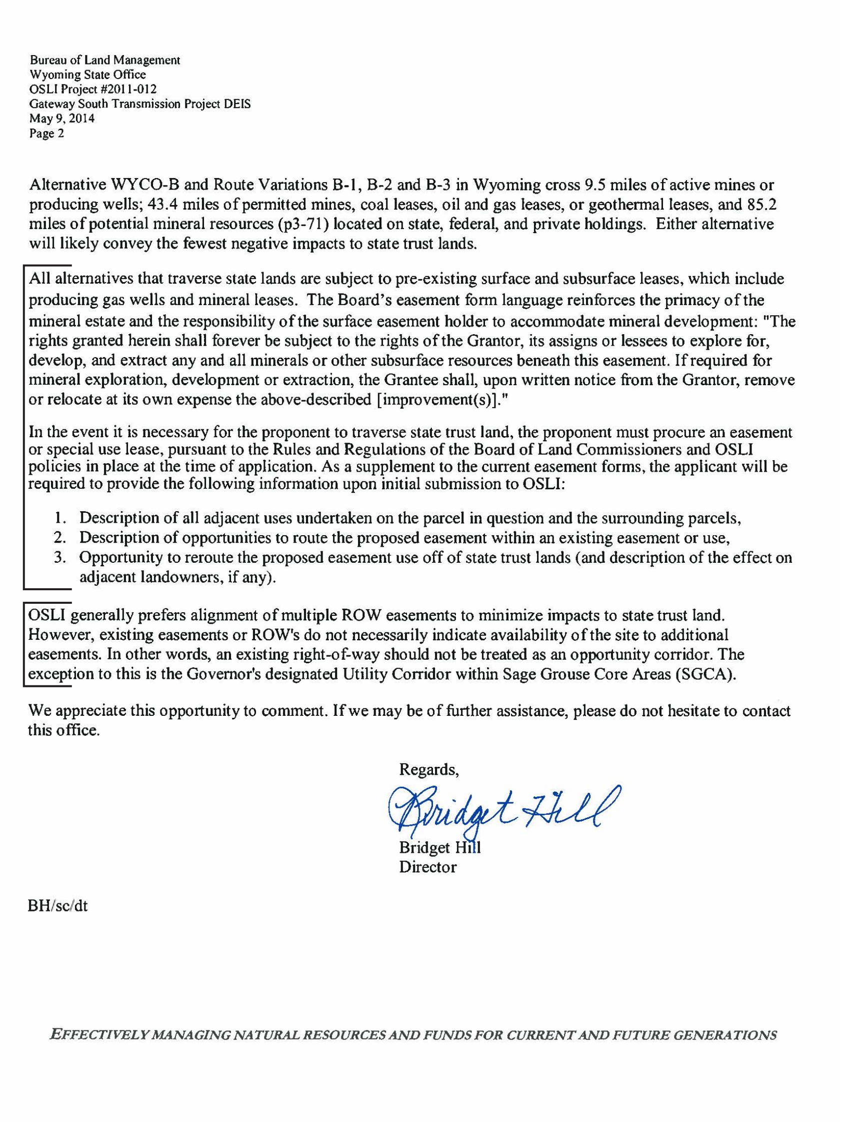
S6a The information provided by Wyoming Office of State Lands and Investments has been provided to the Applicant. The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing that the Applicant must acquire all access permissions and permits for lands outside of their jurisdiction.

S6b Comment and route preference noted.

Comment(s)

Response(s)

S6 **Wyoming Office of State Lands and Investments (cont.)**



Bureau of Land Management
Wyoming State Office
OSLI Project #2011-012
Gateway South Transmission Project DEIS
May 9, 2014
Page 2

Alternative WYCO-B and Route Variations B-1, B-2 and B-3 in Wyoming cross 9.5 miles of active mines or producing wells; 43.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases, and 85.2 miles of potential mineral resources (p3-71) located on state, federal, and private holdings. Either alternative will likely convey the fewest negative impacts to state trust lands.

S6c

All alternatives that traverse state lands are subject to pre-existing surface and subsurface leases, which include producing gas wells and mineral leases. The Board's easement form language reinforces the primacy of the mineral estate and the responsibility of the surface easement holder to accommodate mineral development: "The rights granted herein shall forever be subject to the rights of the Grantor, its assigns or lessees to explore for, develop, and extract any and all minerals or other subsurface resources beneath this easement. If required for mineral exploration, development or extraction, the Grantee shall, upon written notice from the Grantor, remove or relocate at its own expense the above-described [improvement(s)]."

In the event it is necessary for the proponent to traverse state trust land, the proponent must procure an easement or special use lease, pursuant to the Rules and Regulations of the Board of Land Commissioners and OSLI policies in place at the time of application. As a supplement to the current easement forms, the applicant will be required to provide the following information upon initial submission to OSLI:

1. Description of all adjacent uses undertaken on the parcel in question and the surrounding parcels,
2. Description of opportunities to route the proposed easement within an existing easement or use,
3. Opportunity to reroute the proposed easement use off of state trust lands (and description of the effect on adjacent landowners, if any).

S6d

OSLI generally prefers alignment of multiple ROW easements to minimize impacts to state trust land. However, existing easements or ROW's do not necessarily indicate availability of the site to additional easements. In other words, an existing right-of-way should not be treated as an opportunity corridor. The exception to this is the Governor's designated Utility Corridor within Sage Grouse Core Areas (SGCA).

We appreciate this opportunity to comment. If we may be of further assistance, please do not hesitate to contact this office.

Regards,

Bridget Hill

Bridget Hill
Director

BH/sc/dt

EFFECTIVELY MANAGING NATURAL RESOURCES AND FUNDS FOR CURRENT AND FUTURE GENERATIONS

S6c

See response to Comment S6a. It is expected the Applicant would resolve conflicts with regard to mineral ownership and access along the selected route through fee mineral and landowner agreements and permissions. In general, BLM expects that the likelihood and potential for such conflict are low and the effect small. With the availability of current technology, oil and gas recovery still could occur in proximity to transmission lines. Discussion is included in Section 3.2.2.5 that acknowledges the potential for isolated conflicts with future mineral development, and noting the BLM's expectation that the Applicant would obtain permissions and agreements that resolve conflicts with regard to mineral ownership and access along the selected route prior to construction.

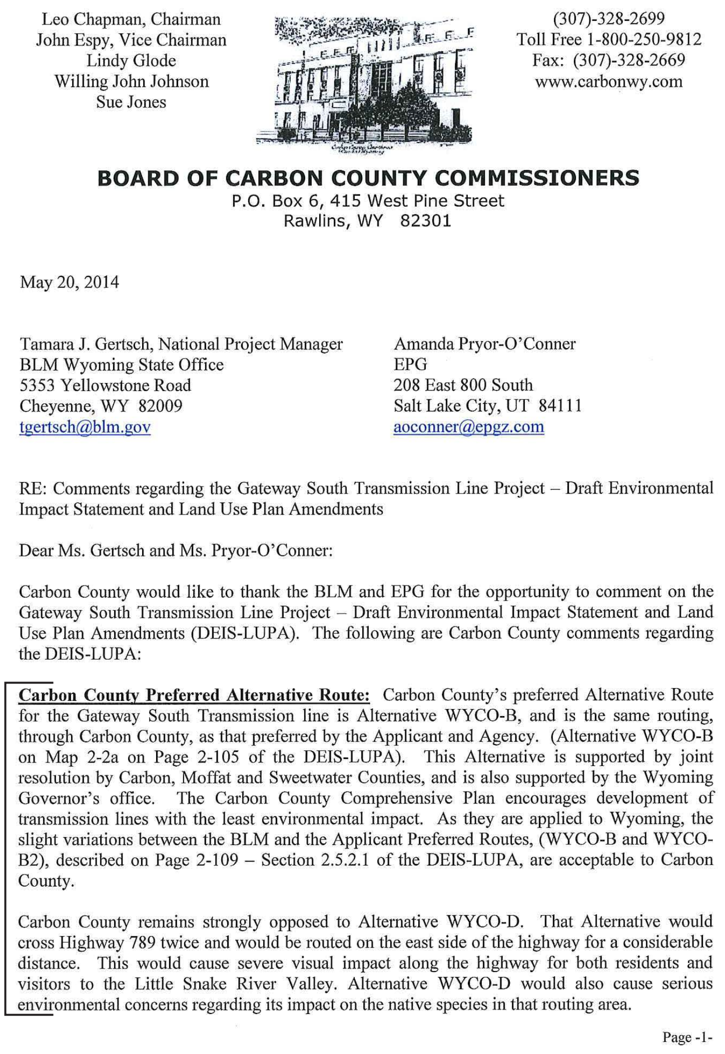
S6d

Comment noted.

Exhibit P3
County

Comment(s)

C1 **Board of Carbon County Commissioners**



Leo Chapman, Chairman
John Espy, Vice Chairman
Lindy Glode
Willing John Johnson
Sue Jones

(307)-328-2699
Toll Free 1-800-250-9812
Fax: (307)-328-2669
www.carbonwy.com

BOARD OF CARBON COUNTY COMMISSIONERS
P.O. Box 6, 415 West Pine Street
Rawlins, WY 82301

May 20, 2014

Tamara J. Gertsch, National Project Manager
BLM Wyoming State Office
5353 Yellowstone Road
Cheyenne, WY 82009
tgertsch@blm.gov

Amanda Pryor-O'Conner
EPG
208 East 800 South
Salt Lake City, UT 84111
aoconner@epgz.com

RE: Comments regarding the Gateway South Transmission Line Project – Draft Environmental Impact Statement and Land Use Plan Amendments

Dear Ms. Gertsch and Ms. Pryor-O'Conner:

Carbon County would like to thank the BLM and EPG for the opportunity to comment on the Gateway South Transmission Line Project – Draft Environmental Impact Statement and Land Use Plan Amendments (DEIS-LUPA). The following are Carbon County comments regarding the DEIS-LUPA:

C1a **Carbon County Preferred Alternative Route:** Carbon County's preferred Alternative Route for the Gateway South Transmission line is Alternative WYCO-B, and is the same routing, through Carbon County, as that preferred by the Applicant and Agency. (Alternative WYCO-B on Map 2-2a on Page 2-105 of the DEIS-LUPA). This Alternative is supported by joint resolution by Carbon, Moffat and Sweetwater Counties, and is also supported by the Wyoming Governor's office. The Carbon County Comprehensive Plan encourages development of transmission lines with the least environmental impact. As they are applied to Wyoming, the slight variations between the BLM and the Applicant Preferred Routes, (WYCO-B and WYCO-B2), described on Page 2-109 – Section 2.5.2.1 of the DEIS-LUPA, are acceptable to Carbon County.

Carbon County remains strongly opposed to Alternative WYCO-D. That Alternative would cross Highway 789 twice and would be routed on the east side of the highway for a considerable distance. This would cause severe visual impact along the highway for both residents and visitors to the Little Snake River Valley. Alternative WYCO-D would also cause serious environmental concerns regarding its impact on the native species in that routing area.

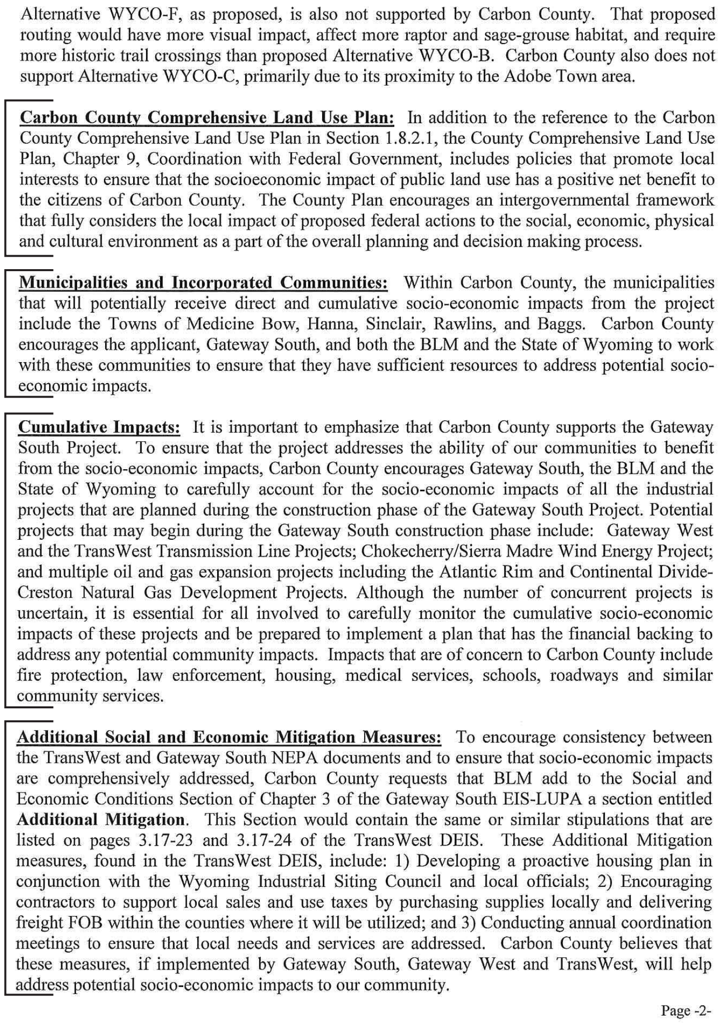
Page -1-

Response(s)

C1a Comment and route preference noted.

Comment(s)

C1 **Board of Carbon County Commissioners (cont.)**



Alternative WYCO-F, as proposed, is also not supported by Carbon County. That proposed routing would have more visual impact, affect more raptor and sage-grouse habitat, and require more historic trail crossings than proposed Alternative WYCO-B. Carbon County also does not support Alternative WYCO-C, primarily due to its proximity to the Adobe Town area.

C1b **Carbon County Comprehensive Land Use Plan:** In addition to the reference to the Carbon County Comprehensive Land Use Plan in Section 1.8.2.1, the County Comprehensive Land Use Plan, Chapter 9, Coordination with Federal Government, includes policies that promote local interests to ensure that the socioeconomic impact of public land use has a positive net benefit to the citizens of Carbon County. The County Plan encourages an intergovernmental framework that fully considers the local impact of proposed federal actions to the social, economic, physical and cultural environment as a part of the overall planning and decision making process.

C1c **Municipalities and Incorporated Communities:** Within Carbon County, the municipalities that will potentially receive direct and cumulative socio-economic impacts from the project include the Towns of Medicine Bow, Hanna, Sinclair, Rawlins, and Baggs. Carbon County encourages the applicant, Gateway South, and both the BLM and the State of Wyoming to work with these communities to ensure that they have sufficient resources to address potential socio-economic impacts.

C1d **Cumulative Impacts:** It is important to emphasize that Carbon County supports the Gateway South Project. To ensure that the project addresses the ability of our communities to benefit from the socio-economic impacts, Carbon County encourages Gateway South, the BLM and the State of Wyoming to carefully account for the socio-economic impacts of all the industrial projects that are planned during the construction phase of the Gateway South Project. Potential projects that may begin during the Gateway South construction phase include: Gateway West and the TransWest Transmission Line Projects; Chokecherry/Sierra Madre Wind Energy Project; and multiple oil and gas expansion projects including the Atlantic Rim and Continental Divide-Creston Natural Gas Development Projects. Although the number of concurrent projects is uncertain, it is essential for all involved to carefully monitor the cumulative socio-economic impacts of these projects and be prepared to implement a plan that has the financial backing to address any potential community impacts. Impacts that are of concern to Carbon County include fire protection, law enforcement, housing, medical services, schools, roadways and similar community services.

C1e **Additional Social and Economic Mitigation Measures:** To encourage consistency between the TransWest and Gateway South NEPA documents and to ensure that socio-economic impacts are comprehensively addressed, Carbon County requests that BLM add to the Social and Economic Conditions Section of Chapter 3 of the Gateway South EIS-LUPA a section entitled **Additional Mitigation**. This Section would contain the same or similar stipulations that are listed on pages 3.17-23 and 3.17-24 of the TransWest DEIS. These Additional Mitigation measures, found in the TransWest DEIS, include: 1) Developing a proactive housing plan in conjunction with the Wyoming Industrial Siting Council and local officials; 2) Encouraging contractors to support local sales and use taxes by purchasing supplies locally and delivering freight FOB within the counties where it will be utilized; and 3) Conducting annual coordination meetings to ensure that local needs and services are addressed. Carbon County believes that these measures, if implemented by Gateway South, Gateway West and TransWest, will help address potential socio-economic impacts to our community.

Page -2-

Response(s)

C1b Comment noted. The Bureau of Land Management (BLM) appreciates the participation of Carbon County as a cooperating agency in preparation of the Environmental Impact Statement (EIS) for the Energy Gateway South Transmission Project (Project).

In accordance with National Environmental Policy Act (NEPA), the potential impacts of a federal action on a particular resource or resource use are analyzed and reported similarly for all jurisdictions.

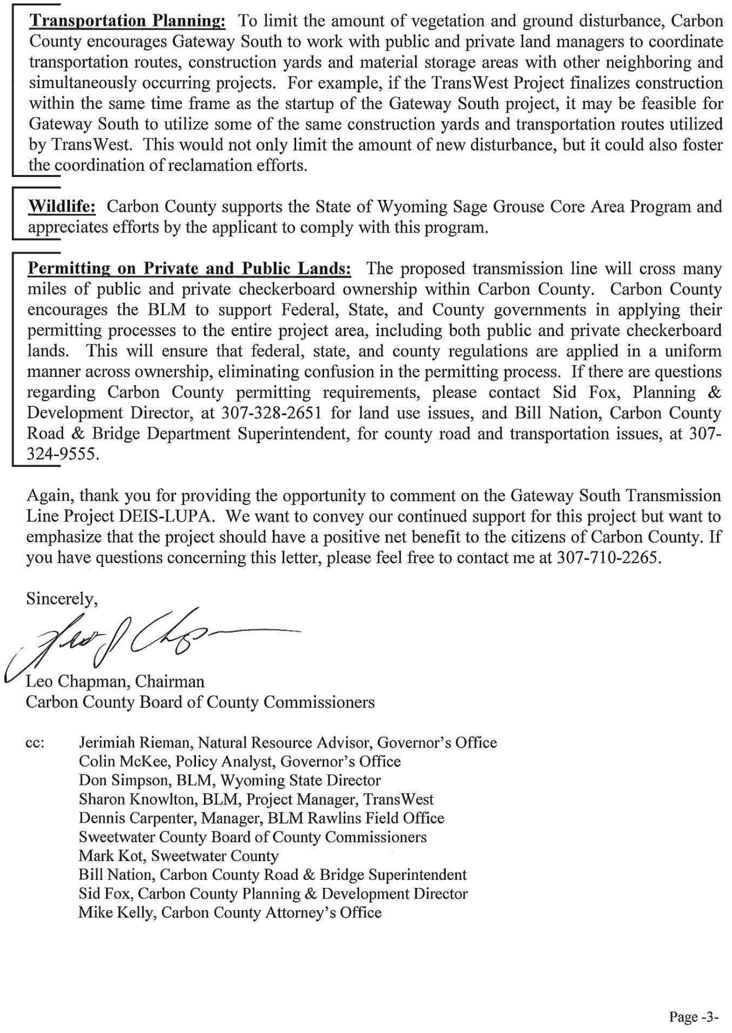
C1c See response to Comment C1b. Recommendations to mitigate impacts related to the availability of resources, purchase of local goods and service, and workforce impacts on housing and communities in specific locations and towns will be addressed during the county and/or state permitting phase of the project (e.g., the Wyoming Industrial Siting Permits). Additionally, PacifiCorp doing business as Rocky Mountain Power (Applicant) employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

C1d See responses to Comments C1b and C1c.

C1e Mitigation recommendations related to the purchase of local goods and services and workforce impacts on housing and communities in specific locations and towns will be addressed during the county and/or state permitting phase of the project (e.g., the Wyoming Industrial Siting Permits). Additionally, the Applicant employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

Comment(s)

C1 | **Board of Carbon County Commissioners (cont.)**



C1f

Transportation Planning: To limit the amount of vegetation and ground disturbance, Carbon County encourages Gateway South to work with public and private land managers to coordinate transportation routes, construction yards and material storage areas with other neighboring and simultaneously occurring projects. For example, if the TransWest Project finalizes construction within the same time frame as the startup of the Gateway South project, it may be feasible for Gateway South to utilize some of the same construction yards and transportation routes utilized by TransWest. This would not only limit the amount of new disturbance, but it could also foster the coordination of reclamation efforts.

C1g

Wildlife: Carbon County supports the State of Wyoming Sage Grouse Core Area Program and appreciates efforts by the applicant to comply with this program.

C1h

Permitting on Private and Public Lands: The proposed transmission line will cross many miles of public and private checkerboard ownership within Carbon County. Carbon County encourages the BLM to support Federal, State, and County governments in applying their permitting processes to the entire project area, including both public and private checkerboard lands. This will ensure that federal, state, and county regulations are applied in a uniform manner across ownership, eliminating confusion in the permitting process. If there are questions regarding Carbon County permitting requirements, please contact Sid Fox, Planning & Development Director, at 307-328-2651 for land use issues, and Bill Nation, Carbon County Road & Bridge Department Superintendent, for county road and transportation issues, at 307-324-9555.

Again, thank you for providing the opportunity to comment on the Gateway South Transmission Line Project DEIS-LUPA. We want to convey our continued support for this project but want to emphasize that the project should have a positive net benefit to the citizens of Carbon County. If you have questions concerning this letter, please feel free to contact me at 307-710-2265.

Sincerely,

Leo Chapman, Chairman
Carbon County Board of County Commissioners

cc:
Jerimiah Rieman, Natural Resource Advisor, Governor's Office
Colin McKee, Policy Analyst, Governor's Office
Don Simpson, BLM, Wyoming State Director
Sharon Knowlton, BLM, Project Manager, TransWest
Dennis Carpenter, Manager, BLM Rawlins Field Office
Sweetwater County Board of County Commissioners
Mark Kot, Sweetwater County
Bill Nation, Carbon County Road & Bridge Superintendent
Sid Fox, Carbon County Planning & Development Director
Mike Kelly, Carbon County Attorney's Office

Page -3-

Response(s)

C1f The BLM believes these topics are most appropriately addressed during the county and/or state permitting phase of the Project rather than the EIS to support federal decisions on whether or not to grant right-of-way for the Project. Also, the Applicant employs Community and Customer Managers to coordinate with local communities about such requirements, concerns, and recommendations.

C1g Comment noted.

C1h See responses to Comments C1b and C1c.

Comment(s)

Response(s)

C2 Coalition of Local Governments

COALITION OF LOCAL GOVERNMENTS
925 SAGE AVENUE, SUITE 302
KEMMERER, WY 83101

COUNTY COMMISSIONS AND CONSERVATION DISTRICTS FOR LINCOLN,
SWEETWATER, UINTA, AND SUBLETTE - WYOMING

May 22, 2014

Via GatewaySouth_WYMail@blm.gov

Tamara Gertsch, National Project Manager
Energy Gateway South Project
Bureau of Land Management
P.O. Box 21150
Cheyenne, WY82003

RE: Gateway South Transmission Line Project – Draft Environmental Impact Statement and Draft Land Use Plan Amendments

Ms. Gertsch:

The Coalition of Local Governments ("Coalition" or "CLG"), on behalf of participating members, appreciates the opportunity to comment on the Gateway South Transmission Line Project DEIS. The Coalition incorporates by reference those comments submitted by Sweetwater County.

Statement of Interest

Initially, it is important to understand that the Coalition and members of the Coalition are not merely members of the public. The Coalition provides the technical guidance for local government cooperating agencies in writing comments and identifying issues. The Coalition is a voluntary association of local governments organized under the laws of the State of Wyoming to educate, guide, and develop public land policy in the affected counties. Wyo. Stat. §§11-16-103, 11-16-122. Coalition members include Lincoln County, Sweetwater County, Uinta County, Sublette County, Lincoln County Conservation District, Sweetwater Conservation District, Uinta County Conservation District, Sublette County Conservation District, and Little Snake River Conservation District. The Coalition serves many purposes for its members, including the promotion of policies and land management that protect vested rights of individuals and industries dependent on utilizing and conserving existing resources and public lands, the promotes and supports habitat improvement, supports and finds scientific studies addressing federal land use plans and projects, and providing comments on behalf of members for the educational benefit of those proposing federal land use plans and land use projects.

Comment(s)

Response(s)

C2 **Coalition of Local Governments (cont.)**

Gertsch, Tamara
Gateway South Transmission Line Project
2

Both county and conservation district members of the Coalition have authority to protect the public health and welfare of Wyoming citizens while promoting and protecting public lands and natural resources. Wyo. Stat. §§18-5-102; Wyo. Stat. §§11-16-122. Given this broad statutory charge and wealth of experience in public land and natural resource matters, the Coalition has coordinated efforts with WDEQ, Bureau of Land Management, Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Forest Service, and other federal, state, and local entities.

Thank you for addressing our specific and varied comments attached to this letter.

Sincerely,

/s/ Kent Connelly, Chairman
Coalition of Local Governments

cc: Wyoming Governor's Office
Wyoming Department of Agriculture
Wyoming Game and Fish
Wyoming Association of Conservation Districts
Wyoming County Commissioners Association
Wyoming State Lands
Wyoming Congressional Delegation
Carbon County Commissioners
Moffat County Commissioners

Comment(s)

C2

Coalition of Local Governments (cont.)

Energy Gateway South Transmission Line Project
Draft EIS–February 2014

	Comment Number	Section	Page Number	Commenter	Comment or Text Revision
C2a	1.	All	All	Coalition	Gateway West, TransWest Transmission Line, Chokecherry/Sierra Madre, Normally Pressurized Lance, Moxa Arch, Hiawatha, Continental Divide, and multiple other projects will interact with the Gateway South Project to produce cumulative socioeconomic impacts that must be fully analyzed and disclosed and carefully monitored as more projects are authorized.
C2b	2.	All	All	Coalition	The DEIS does not analyze and disclose the impacts the project will have on Greater Sage-Grouse habitat disturbance caps as delineated in the SG-9 Plan. The fact that disturbance caps as outlined in the SG-9 Plan have not been implemented does not save the BLM from analyzing the full range of possibilities here. Whether BLM implements a 3% disturbance cap or a 5% disturbance cap, the BLM will be forced to disclose how the Gateway South project interacts with *any* disturbance cap listed in another plan.
C2c	3.	2.4.8 Environmental Design Features of the Proposed Action	2-35 – 2-39	Coalition	Following completion of construction, the disturbed areas must be "**immediately reclaimed**." Noxious weeds spread quickly and prevent valuable habitat and native species from reestablishing themselves. If the reclamation is implemented immediately, then site stabilization and intermediate reclamation should be used to ensure final reclamation success. The appropriate seed mixture used during reclamation efforts should be a mixture of native and sterile nonnative plant seeds. Sterile nonnative plant seeds have been successfully used in the area to restore vegetation cover and hold the soil until native plant species reestablish themselves. Experience shows that drought, soil types, and slow germination of native species alone will often lead to reclamation failure.
C2d	4.	3.2.2.1.3 Mineral Resources	3-61	Coalition	NEPA and FLPMA serve as the primary legislation requiring assessment and mitigation of potential impacts on mineral resources when considering proposals for major actions on federally administered land. Those mineral resources include Rare Earths and the BLM must analyze and disclose the presence of rare earth resources within the right-of-way corridor and adjacent to the corridor.

Energy Gateway South Transmission Project 1 May 22, 2014
Draft EIS

Response(s)

C2a These projects are included in the analysis of potential cumulative effects presented in Chapter 4 of the EIS.

C2b The BLM is not required to evaluate potential restrictions contained in the alternatives considered in the federal sage-grouse manangement planning process in the EIS for the Project. The analysis contained in the Final EIS for the Project is based on BLM and other cooperating agency policies and plans pertaining to sage-grouse management that are in effect at the time the analysis was prepared. If an action alternative is selected, BLM's decision on the Project would comply with all relevant sage-grouse stipulations in applicable BLM Resource Management Plans (RMP) at the time the decision is issued.

C2c The Plan of Development (POD) will include a Noxious Weed Management Plan (to be developed in coordination with cooperating agencies and finalized for the selected route before construction may proceed) that includes noxious weed control measures in accordance with existing regulations and BLM and U.S. Forest Service (USFS) requirements. Control measures will be based on species-specific and site-specific conditions (e.g., proximity to water or riparian areas, agricultural areas, and season) and will be coordinated with the BLM or USFS Authorized Officer or his/her designated representative, Project Managers, the Compliance Inspection Contractor, and the Construction Contractor's weed management specialist. Further, the Noxious Weed Management Plan will be based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 and Forest Service Noxious Weed Management Manual 2080.

C2d No rare earth mines are present in the Project area; and the BLM is not aware of any data indicating areas of rare earths in Wyoming. Because the chance of the Project affecting rare earths was extremely low, the BLM determined additional analysis was not warranted.

Comment(s)

C2 **Coalition of Local Governments (cont.)**

Energy Gateway South Transmission Line Project
Draft EIS–February 2014

C2e

Comment Number	Section	Page Number	Commenter	Comment or Text Revision
5.	3.2.2.4.2 Impact Assessment and Mitigation Planning (Earth Resources)	3-63 – 3-71	Coalition	The BLM may not assume that the power line will "span" any production facilities (3-70,71) since it appears that the power lines may cross wells, other transmission lines, and other structures with varying heights. *See* Appendix B at 2-1 – 2-7; 4-1. For example, the wire zone on a Mono-pole structure (Appendix B, 2-5) is substantially different than that of a Lattice Steel Structure (Appendix B, 2-2). Thus, some existing structures may fit under one transmission structure but not another exposing the flaw of BLM's generalization. Instead, the BLM must closely analyze and disclose which structures will be used under what circumstances to minimize the conflict between existing and future energy projects and the Gateway South transmission line. The same is true for the right-of-way corridor that expands or decreases depending on the transmission structure. *See* Appendix B at 3-1. Finally, the DEIS also omits any discussion on who has priority over the right-of-way when an existing mining claim or oil and gas lease is located within the transmission line right-of-way. BLM unequivocally states that vegetation will be cleared from under the transmission line (3-225) but does not make a similar conclusion with regards to other manmade structures. Does the transmission line have to be relocated, does the lessee lose some portion of its lease that is bisected by the line, or does the power company compensate the lessee for having to do more expensive directional drilling to avoid conflicts? The TransWest Express DEIS states a major assumption is that "mineral entry can take precedence over other land uses and that the granting of a utility right-of-way does not overrule mineral owners' rights to develop and extract minerals." This assumption should also be adopted by the Energy Gateway South Transmission Line Project.

Response(s)

C2e

The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing that the Applicant must acquire all access permissions for lands outside of their jurisdiction. It is expected the Applicant would resolve conflicts with regard to mineral ownership and access along the selected alternative route, including any compensation for economic impacts to leaseholders, etc., through fee mineral and landowner agreements and permissions. For example, it is the responsibility of the right-of-way grantee to conduct proper due diligence to ensure that legally valid mining claims are respected and agreements are made with claim owners. In general, the BLM expects that the likelihood and potential for such conflict are low and the effect small. With the availability of current technology, mining and oil and gas recovery still could occur in proximity to transmission lines.

Comment(s)

C2

Coalition of Local Governments (cont.)

C2f

Energy Gateway South Transmission Line Project
Draft EIS–February 2014

Comment Number	Section	Page Number	Commenter	Comment or Text Revision
6.	3.2.5.5.4 500kv Transmission Line Components – Alternatives WYCO – Affected Environment	3-232—336	Coalition	Alternatives WYCO-D and WYCO-F would impact 2.0 and 1.9 miles respectively of riparian and wetland habitat. This is mostly from where the proposed rights-of-way would cross the Muddy Creek Wetlands. First, it is unclear whether ROW construction will degrade the wetlands by access roads or otherwise. The EIS must disclose these impacts. Tens of thousands of migrating water fowl, shorebirds, and numerous other avian species utilize the Muddy Creek Wetlands. The Wyoming Audubon lists this area as an Important Bird Area (IBA) and over 120 species of birds have been identified as utilizing the wetlands and the associated migration corridor. Several of these species are species of concern, including several with NSS1 status and on BLM's 6840 list. The proximity of any transmission line to the wetlands significantly increases the potential for collision and death of migrating birds. The DEIS does not disclose nor discuss the impact or expected loss of avian wildlife due to collision with transmission lines in this area. The DEIS does not even identify or discuss the IBA anywhere in the document. BLM must provide in the Vegetation or Wildlife Section discussion on the Muddy Creek Wetlands IBA and address the potential impacts from the proposed transmission line. The Wildlife Section did identify as a concern the impacts on migratory birds, including waterfowl, and the potential of mortality due to collision and electrocution. DEIS at 3-336. Unless BLM plans to conduct an extensive analysis of the impacts to avian collision in this highly sensitive area, Alternative WYCO-B should be selected to avoid this area and negate the need for additional analysis.

Energy Gateway South Transmission Project
Draft EIS
3
May 22, 2014

Response(s)

C2f

Comment and route preference noted. The impact assessment methodology and types of potential impacts on wetlands are discussed in Section 3.2.4 of the Final EIS. Any wetlands or waterways crossed by the Project would be delineated before construction and any impacts on U.S. Army Corps of Engineers jurisdictional features would be subject to Section 404 of the Clean Water Act (refer to Water Resources Regulatory Framework, Section 3.2.4.1.1). Additionally, under Design Feature 33, surface-disturbing activities within 328 feet (100 meters) of riparian areas (including wetlands, stream banks, and shores of ponds or lakes) in Utah or Colorado would be required to meet exception criteria as defined by the BLM. In Wyoming, surface-disturbing activities within 500 feet of all wetlands and waterways would also be required to meet exception criteria in association with the BLM Rawlins Field Office RMP (BLM 2008).

The analysis of potential effects on migratory birds has been updated in Section 3.2.9 of the Final EIS. The revised analysis discloses potential impacts on important bird areas, including the Muddy Creek Wetlands Important Bird Area.

Comment(s)

C2 Coalition of Local Governments (cont.)

Energy Gateway South Transmission Line Project
Draft EIS–February 2014

Comment Number	Section	Page Number	Commenter	Comment or Text Revision
7.	3.2.7.5.4 500kV Transmission Line Components – Alternatives WYCO – Affected Environment (Wildlife)	3-347	Coalition	Alternative WYCO-B will have less impact on Mule Deer winter range in the Baggs area and decrease the impacts on the east-to-west migration corridor for the Baggs Mule Deer herd. *See* DEIS at Table 3-83. Alternative WYCO-B moves the transmission lines farther west where the migration corridor is much broader and significantly less impacted by other uses, such as oil and gas development. Alternatives WYCO-D and WYCO-F will further constrain and negatively impact the Baggs Mule Deer migration corridor at its most constricted point near the five mile point where only two tunnels under the highway (1.5 miles apart) provide for migration. Additional infrastructure and human activity associated with transmission lines in this area may negate or severely impede the use of this narrow corridor for Mule Deer migration. The DEIS needs to analyze these impacts in greater detail and propose mitigation.
8.	3.2.10.5.2 Impact Assessment and Mitigation Planning (Land Uses)	3-379—381	Coalition	A potential environmental effect of the project is loss of rangeland for livestock associated with clearing, pulling and tensioning sights, staging areas, access roads, tower sites, and a batch plant. DEIS at 3-680. The project would also impact active lambing and/or calving areas. *Id.* The DEIS even goes so far as to imply that grazing could be entirely prohibited during "construction and reclamation." *Id.* The DEIS, however, concludes that the impact to grazing would be low and that no mitigation is required. *Id.* The DEIS, therefore, appears inconsistent in its analysis and conclusions drawn. The DEIS does state that construction activities would not occur during lambing and calving, and that the timing stipulations would be addressed in the plan of development. *Id.* at 3-680-81. Also, that loss of vegetation could be minimized by soil and vegetation reclamation practices. *Id.* at 2-741. These mitigation measures do not adequately address the potential impacts the project could have on livestock grazing. The DEIS must analyze and disclose the extent the number of lambing and calving acres that will be impacted or foreclosed to livestock operators as well as the impacts to acres in all the relevant allotments and the seasons those allotments will be impacted. Similarly, BLM's veiled implication that livestock grazing would resume "after construction and reclamation" needs to be explained by acres, length of time, and reasoning.

Energy Gateway South Transmission Project 4 May 22, 2014
Draft EIS

Response(s)

C2g

Comment and route preference noted. Additional information about the migration corridors and potential effects has been added to the analysis of impacts on mule deer winter range and migration corridors in the Baggs area in Section 3.2.7.5.4 under the heading Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO). Design features and selective mitigation measures would be applied to reduce impacts on big game habitat. These are listed in Table 3-80 and described in Section 3.2.7.4.3, under the heading Mitigation Planning and Effectiveness.

C2h

These types of potential effects are discussed in Section 3.2.11.5. Per Design Feature 22 of the Proposed Action (refer to Table 2-8), calving and lambing areas would be avoided to the extent possible. While for the purposes of analysis short-term impacts are assumed to persist for up to 5 years, the agencies do not anticipate that the short-term effects of construction would preclude grazing activities for the duration of a 5-year period. The only situation that may preclude grazing activities is where stabilization of vegetation may be required by agencies or landowners to mitigate the effects of temporary disturbance for some temporary period. It is for these reasons the agencies anticipate the potential impacts on grazing to be low.

In response to the comment, text has been added to the footnotes of the grazing tables in Section 3.2.11.5 to clarify that low initial impacts are anticipated, considering application of design features of the Proposed Action for environmental protection (refer to Section 2.4.8).

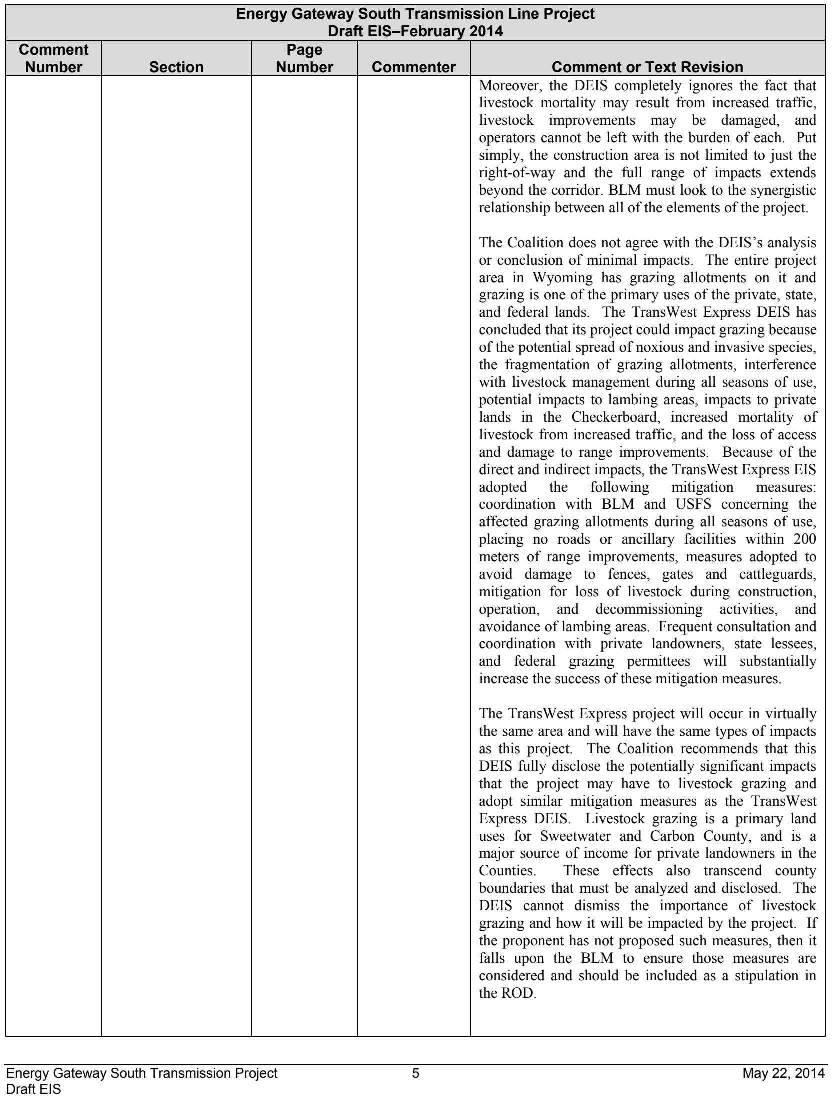
C2i

See response to Comment C2h. No selective mitigation measures were determined necessary for reducing impacts on grazing, considering the application of Design Features 1, 2, 5, 17, 18, 22, 26, 27, 32, and 39 (refer to Section 2.4.8 and Table 2-8).

BLM believes the level of analysis included in the Draft EIS is adequate for the scope of the Project. The methodology for analyzing impacts on other land uses was developed in coordination with the cooperating agencies assisting the BLM in preparation of the EIS.

Comment(s)

C2 **Coalition of Local Governments (cont.)**



	Energy Gateway South Transmission Line Project Draft EIS–February 2014				
	Comment Number	**Section**	**Page Number**	**Commenter**	**Comment or Text Revision**
C2j					Moreover, the DEIS completely ignores the fact that livestock mortality may result from increased traffic, livestock improvements may be damaged, and operators cannot be left with the burden of each. Put simply, the construction area is not limited to just the right-of-way and the full range of impacts extends beyond the corridor. BLM must look to the synergistic relationship between all of the elements of the project.
C2k					The Coalition does not agree with the DEIS's analysis or conclusion of minimal impacts. The entire project area in Wyoming has grazing allotments on it and grazing is one of the primary uses of the private, state, and federal lands. The TransWest Express DEIS has concluded that its project could impact grazing because of the potential spread of noxious and invasive species, the fragmentation of grazing allotments, interference with livestock management during all seasons of use, potential impacts to lambing areas, impacts to private lands in the Checkerboard, increased mortality of livestock from increased traffic, and the loss of access and damage to range improvements. Because of the direct and indirect impacts, the TransWest Express EIS adopted the following mitigation measures: coordination with BLM and USFS concerning the affected grazing allotments during all seasons of use, placing no roads or ancillary facilities within 200 meters of range improvements, measures adopted to avoid damage to fences, gates and cattleguards, mitigation for loss of livestock during construction, operation, and decommissioning activities, and avoidance of lambing areas. Frequent consultation and coordination with private landowners, state lessees, and federal grazing permittees will substantially increase the success of these mitigation measures.
C2l					The TransWest Express project will occur in virtually the same area and will have the same types of impacts as this project. The Coalition recommends that this DEIS fully disclose the potentially significant impacts that the project may have to livestock grazing and adopt similar mitigation measures as the TransWest Express DEIS. Livestock grazing is a primary land uses for Sweetwater and Carbon County, and is a major source of income for private landowners in the Counties. These effects also transcend county boundaries that must be analyzed and disclosed. The DEIS cannot dismiss the importance of livestock grazing and how it will be impacted by the project. If the proponent has not proposed such measures, then it falls upon the BLM to ensure those measures are considered and should be included as a stipulation in the ROD.

Energy Gateway South Transmission Project 5 May 22, 2014
Draft EIS

Response(s)

C2j

The indirect effects of Project, including impacts outside of the Project right-of-way are, disclosed in the analysis. Specifically, Section 3.2.11.5.2 identifies increased mortality of livestock from increased traffic as a potential short-term indirect impact resulting from temporary construction disturbance. Further, Design Feature 22 (discussed in the same section) states that fences, gates, and/or walls would be replaced, repaired, or reclaimed to original condition in the event the are removed or damaged during construction.

The BLM will issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing the Applicant must acquire all access permissions for lands outside of their jurisdiction. The Applicant must also establish agreements with other permittees to resolve conflicts with other permitted uses on BLM-administered lands along the selected route, which could include compensation for economic impacts or losses.

C2k

The Final EIS (refer to Section 3.2.11.5.2) includes discussion of grazing as a primary land use in the Project area and that it is a major source of income in Wyoming. It also includes a reference to the socioeconomic section discussion of impacts on grazing (Section 3.2.22) In response to the comment, additional discussion of the importance of livestock grazing and a more detailed description of how grazing may be impacted by the Project has been included in the Final EIS. Also, additional analysis of the following types of potential effects is included in Section 3.2.11.5.2 and Section 3.2.11.4: potential spread of noxious and invasive species, interference with livestock management, interference of access to livestock operations, and mortality of livestock from increased traffic. The fragmentation of grazing allotments was not considered an impact due to the anticipation that grazing could resume in most cases after construction. Refer also to the response to Comment C2h.

Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with the National Electrical Safety Code, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

The mitigation measures noted (i.e., considered for the TransWest Express transmission project) are considered as design features of the Proposed Action for environmental protection in the Draft EIS; specifically Design Features 1, 2, 5, 17, 18, 22, 26, 27, 32, and 39 (refer to Table 2-8).

C2l

See response to Comment C2k.

Comment(s)

C2 Coalition of Local Governments (cont.)

Energy Gateway South Transmission Line Project **Draft EIS–February 2014**				
Comment Number	**Section**	**Page Number**	**Commenter**	**Comment or Text Revision**
				C2m Mitigation measures should include control of noxious and invasive weeds during the entire period of construction beginning with site stabilization, immediately followed by interim reclamation and final reclamation to control erosion and limit invasive species, mandatory monitoring of reclamation success, avoidance of calving and lambing areas and livestock use during all seasons, and compensation to livestock operators suffering loss of range improvements or livestock losses.
9.	3.2.12.1 Introduction and Regulatory Framework (Transportation and Access)	5-810	Coalition	C2n The beginning of the Transportation and Access Section only states that a detailed access plan for the project will be outlined in the plan of development. DEIS at 3-810. Development of the plan must include heavy consultation and coordination with private land owners, state land lessees, federal livestock grazing permittees, and local governments.
10.	3.2.12.5.2 Impacts Common to All Alternatives (Roadways)	3-818 –819	Coalition	The DEIS concludes that all impacts to transportation and access would be low and provides little discussion as to the potential impacts. *See* DEIS 3-818 – 3-819. C2o The DEIS fails to address the specific impacts on each type of road within each region of the project area, including anticipated volume of traffic correlated to the time of year. In some areas, such as in Wyoming, local roads are more prevalent than highways and interstates, and carry most of the local traffic. These roads are often private, state, and BLM roads. Thus, there needs to be a transportation plan developed with each of these stakeholders at the table during its formulation at the earliest possible stage. These local roads are commonly narrower and may be unpaved, and are therefore more susceptible to adverse impacts from increased construction and operational traffic in the project area. This impact is magnified when taken into consideration with the current congestion issues caused by energy development in the area. C2p Wildlife mitigation measures limit most development to late spring and summer, and road congestion is common during this time. This time period coincides with livestock trailing, which can add to the congestion. The DEIS needs to disclose these facts and when possible mitigate. C2q The DEIS cannot assume that each State, private, and local transportation system will be similarly impacted from the construction and operation of the proposed transmission line. The impacts to transportation and access must be addressed specifically as to the region and type of road involved. The BLM must also address the need to rerouting existing roads to accommodate larger equipment.

Response(s)

C2m See responses to Comments C2c and C2e.

C2n The Transportation and Access Plan will be part of the POD, to be developed in coordination with cooperating agencies. Also, BLM understands the Applicant is committed to working closely with federal, state, local, and private landowners when determining access to the project for construction, operation, and maintenance of the line.

C2o Refer to Chapter 3, Section 3.2.13.1. Discussions of potential impacts on transportation routes, including a discussion of anticipated construction volume increases, are discussed in regions associated with the likely construction spreads. See also response to Comment C2n.

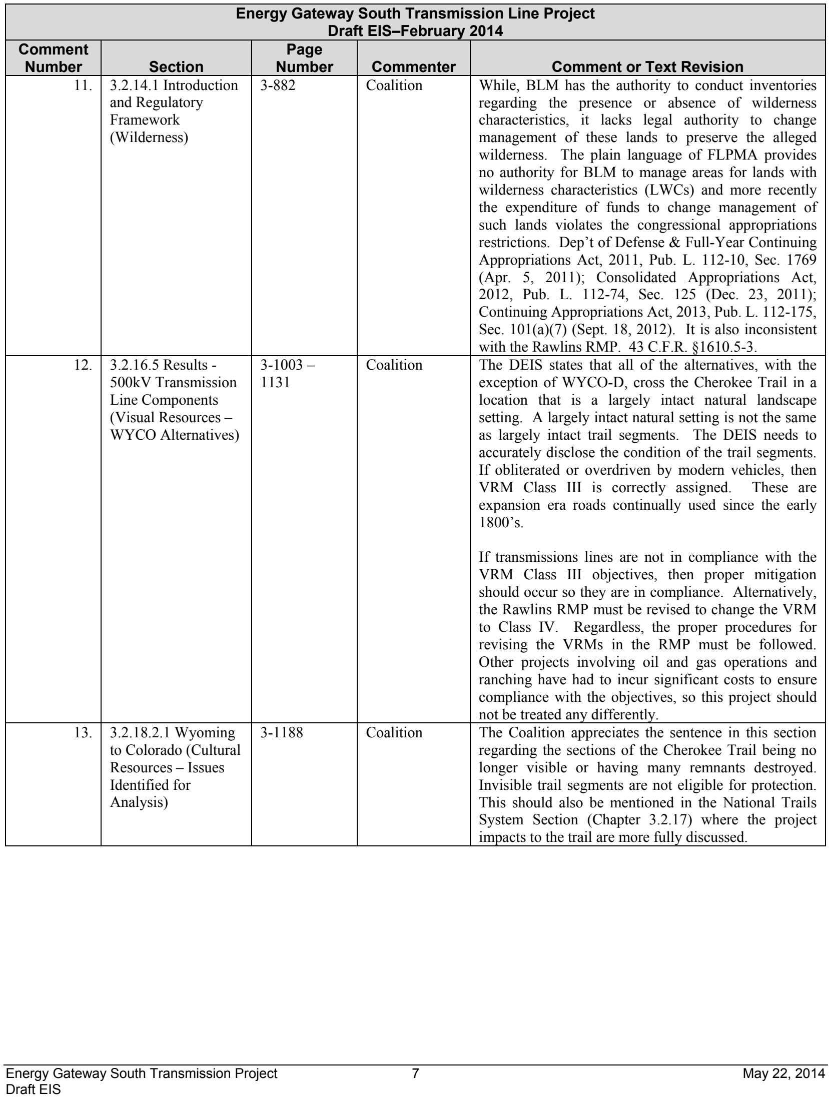
C2p Refer to 3.2.11.5.2 for discussion of potential impacts on livestock operations. Additionally, Design Feature 22 addresses trailing areas. The Applicant would coordinate with the applicable land-management agency or private landowner to avoid areas used for calving, lambing, and trailing during construction. Further, anticipated volume of traffic and timing during construction is discussed in Section 3.2.13.1.

C2q See responses to Comments C2n and C2o.

Comment(s)

C2

Coalition of Local Governments (cont.)



Energy Gateway South Transmission Line Project Draft EIS–February 2014				
Comment Number	**Section**	**Page Number**	**Commenter**	**Comment or Text Revision**
11.	3.2.14.1 Introduction and Regulatory Framework (Wilderness)	3-882	Coalition	While, BLM has the authority to conduct inventories regarding the presence or absence of wilderness characteristics, it lacks legal authority to change management of these lands to preserve the alleged wilderness. The plain language of FLPMA provides no authority for BLM to manage areas for lands with wilderness characteristics (LWCs) and more recently the expenditure of funds to change management of such lands violates the congressional appropriations restrictions. Dep't of Defense & Full-Year Continuing Appropriations Act, 2011, Pub. L. 112-10, Sec. 1769 (Apr. 5, 2011); Consolidated Appropriations Act, 2012, Pub. L. 112-74, Sec. 125 (Dec. 23, 2011); Continuing Appropriations Act, 2013, Pub. L. 112-175, Sec. 101(a)(7) (Sept. 18, 2012). It is also inconsistent with the Rawlins RMP. 43 C.F.R. §1610.5-3.
12.	3.2.16.5 Results - 500kV Transmission Line Components (Visual Resources – WYCO Alternatives)	3-1003 – 1131	Coalition	The DEIS states that all of the alternatives, with the exception of WYCO-D, cross the Cherokee Trail in a location that is a largely intact natural landscape setting. A largely intact natural setting is not the same as largely intact trail segments. The DEIS needs to accurately disclose the condition of the trail segments. If obliterated or overdriven by modern vehicles, then VRM Class III is correctly assigned. These are expansion era roads continually used since the early 1800's. If transmissions lines are not in compliance with the VRM Class III objectives, then proper mitigation should occur so they are in compliance. Alternatively, the Rawlins RMP must be revised to change the VRM to Class IV. Regardless, the proper procedures for revising the VRMs in the RMP must be followed. Other projects involving oil and gas operations and ranching have had to incur significant costs to ensure compliance with the objectives, so this project should not be treated any differently.
13.	3.2.18.2.1 Wyoming to Colorado (Cultural Resources – Issues Identified for Analysis)	3-1188	Coalition	The Coalition appreciates the sentence in this section regarding the sections of the Cherokee Trail being no longer visible or having many remnants destroyed. Invisible trail segments are not eligible for protection. This should also be mentioned in the National Trails System Section (Chapter 3.2.17) where the project impacts to the trail are more fully discussed.

Energy Gateway South Transmission Project Draft EIS 7 May 22, 2014

Response(s)

C2r

Under BLM Manual 6310 and 6320, the BLM is required to inventory federal lands for non-wilderness study area lands with wilderness characteristics. Only certain units inventoried may be incorporated into a RMP, typically through a plan amendment. These units must possess wilderness characteristics that could allow for the unit to be considered for a wilderness designation. Units that were inventoried but were not adopted into a RMP may have certain uses and development occur in the boundary of the unit. For example, the BLM can restrict mineral development in a unit.

C2s

The Key Observation Point (KOP) descriptions in Chapter 3 associated with the Cherokee and Overland historic trails have been modified to include both the level of landscape setting intactness and whether the trail segments are contributing or non-contributing to paint a complete picture for determining compliance.

C2t

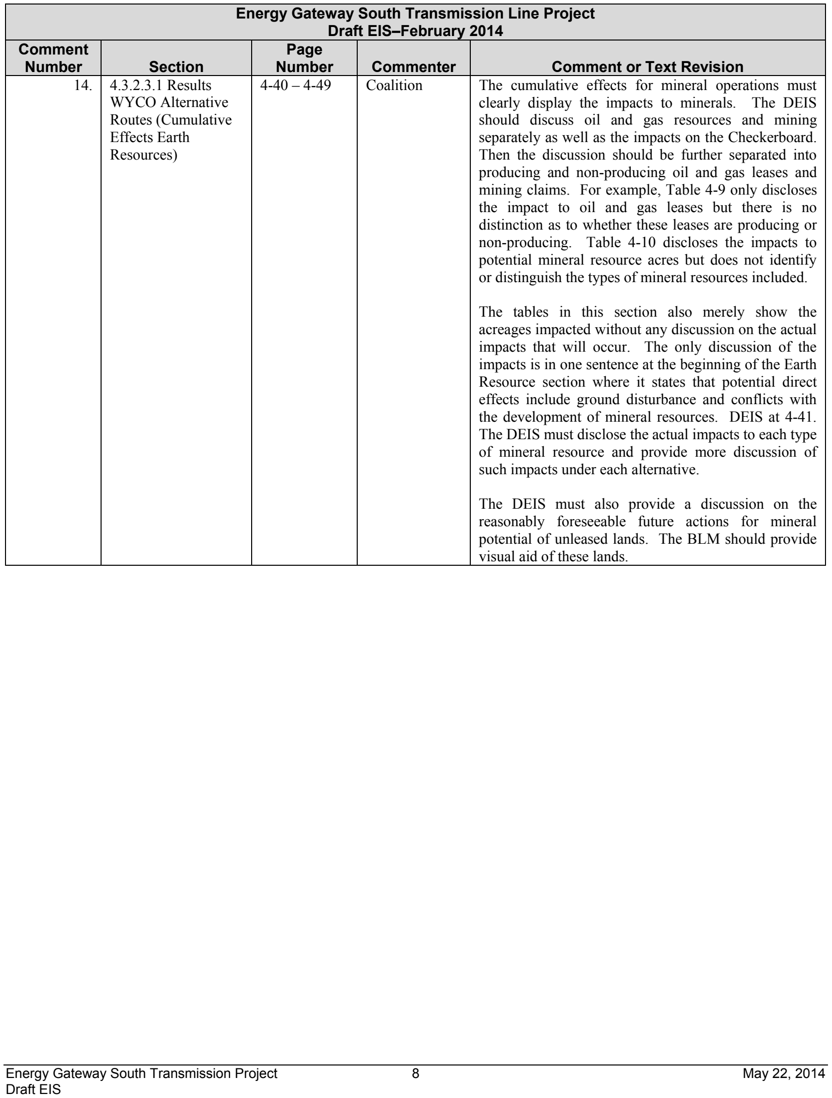
In locations where the Project could not be brought into compliance with Visual Resource Management (VRM) Class objectives through mitigation, plan amendments were proposed as presented in Chapter 5.

C2u

Please note this statement is included in Section 3.2.19.3.4 where the Cherokee Historic Trail is discussed in more detail.

Comment(s)

C2 **Coalition of Local Governments (cont.)**



Energy Gateway South Transmission Line Project Draft EIS–February 2014				
Comment Number	**Section**	**Page Number**	**Commenter**	**Comment or Text Revision**
14.	4.3.2.3.1 Results WYCO Alternative Routes (Cumulative Effects Earth Resources)	4-40 – 4-49	Coalition	C2v The cumulative effects for mineral operations must clearly display the impacts to minerals. The DEIS should discuss oil and gas resources and mining separately as well as the impacts on the Checkerboard. Then the discussion should be further separated into producing and non-producing oil and gas leases and mining claims. For example, Table 4-9 only discloses the impact to oil and gas leases but there is no distinction as to whether these leases are producing or non-producing. Table 4-10 discloses the impacts to potential mineral resource acres but does not identify or distinguish the types of mineral resources included. C2w The tables in this section also merely show the acreages impacted without any discussion on the actual impacts that will occur. The only discussion of the impacts is in one sentence at the beginning of the Earth Resource section where it states that potential direct effects include ground disturbance and conflicts with the development of mineral resources. DEIS at 4-41. The DEIS must disclose the actual impacts to each type of mineral resource and provide more discussion of such impacts under each alternative. C2x The DEIS must also provide a discussion on the reasonably foreseeable future actions for mineral potential of unleased lands. The BLM should provide visual aid of these lands.

Energy Gateway South Transmission Project Draft EIS 8 May 22, 2014

Response(s)

C2v

Comment noted. An assumption for analysis inherent in the approach for analysis of potential impact on oil and gas and other mineral resources is that all leases are (or would become) producing wells. BLM believes that a description of the types of mineral uses in the study corridors in the regional setting and affected environment sections is adequate to characterize the impacts without disclosing impacts by resource category. The types of mineral uses in the study corridors are defined in the regional setting and affected environment section of Section 3.2.2.

C2w

See response to Comment C2v.

In accordance with NEPA, the potential impacts of a federal action on a particular resource or resource use are analyzed and reported similarly for all jurisdictions.

In general, BLM expects that the likelihood and potential for such conflict are low and the effect small. With the availability of current technology, mining and oil and gas recovery still could occur in proximity to transmission lines. Discussion is included in Section 3.2.2.5 that acknowledges the potential for isolated conflicts with future mineral development, noting the BLM's expectation that the Applicant would obtain permissions and agreements that resolve conflicts with regard to mineral ownership and access along the selected route prior to construction.

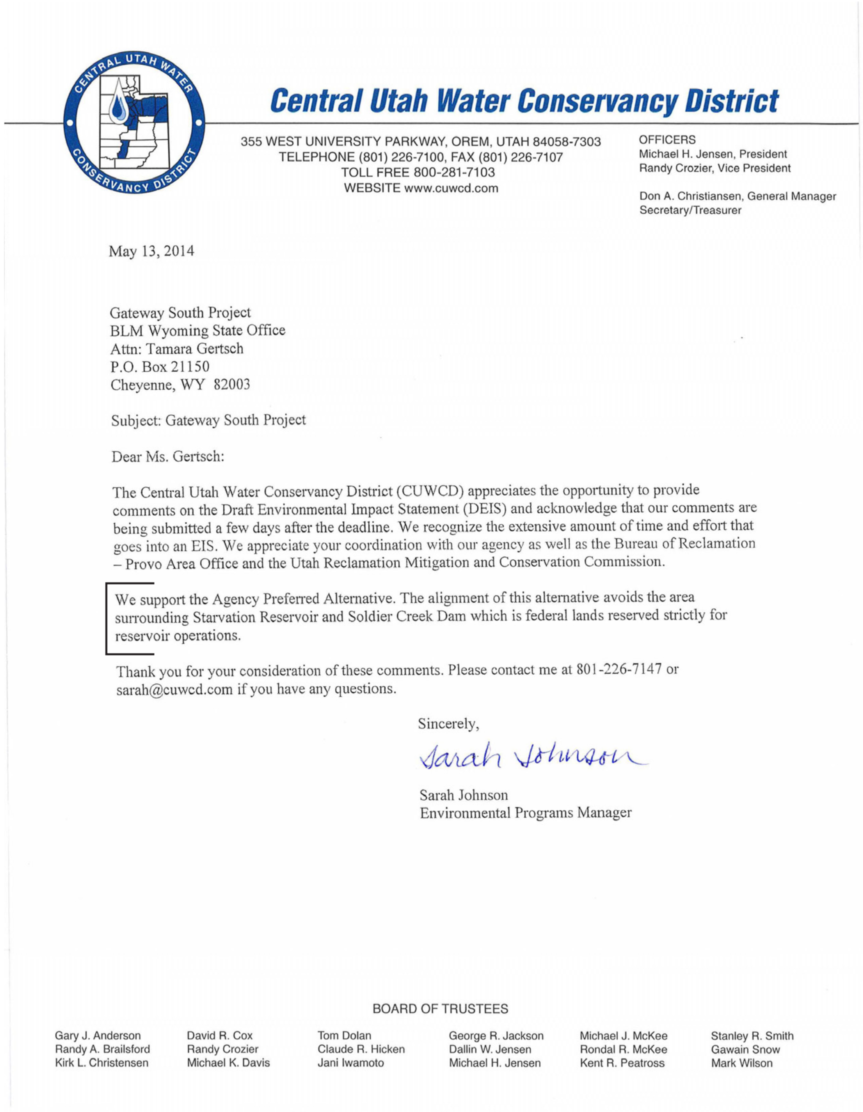
C2x

See response to Comment C2v.

The reasonably foreseeable future actions considered in the analysis, including mining and oil and gas development areas, are displayed in MV-25a in the Map Volume (MV) of the Draft EIS and MV-27a in the Map Volume of the Final EIS.

Comment(s)

C3 | **Central Utah Water Conservancy District**



Central Utah Water Conservancy District

355 WEST UNIVERSITY PARKWAY, OREM, UTAH 84058-7303
TELEPHONE (801) 226-7100, FAX (801) 226-7107
TOLL FREE 800-281-7103
WEBSITE www.cuwcd.com

OFFICERS
Michael H. Jensen, President
Randy Crozier, Vice President

Don A. Christiansen, General Manager
Secretary/Treasurer

May 13, 2014

Gateway South Project
BLM Wyoming State Office
Attn: Tamara Gertsch
P.O. Box 21150
Cheyenne, WY 82003

Subject: Gateway South Project

Dear Ms. Gertsch:

The Central Utah Water Conservancy District (CUWCD) appreciates the opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) and acknowledge that our comments are being submitted a few days after the deadline. We recognize the extensive amount of time and effort that goes into an EIS. We appreciate your coordination with our agency as well as the Bureau of Reclamation – Provo Area Office and the Utah Reclamation Mitigation and Conservation Commission.

C3a We support the Agency Preferred Alternative. The alignment of this alternative avoids the area surrounding Starvation Reservoir and Soldier Creek Dam which is federal lands reserved strictly for reservoir operations.

Thank you for your consideration of these comments. Please contact me at 801-226-7147 or sarah@cuwcd.com if you have any questions.

Sincerely,

Sarah Johnson

Sarah Johnson
Environmental Programs Manager

BOARD OF TRUSTEES

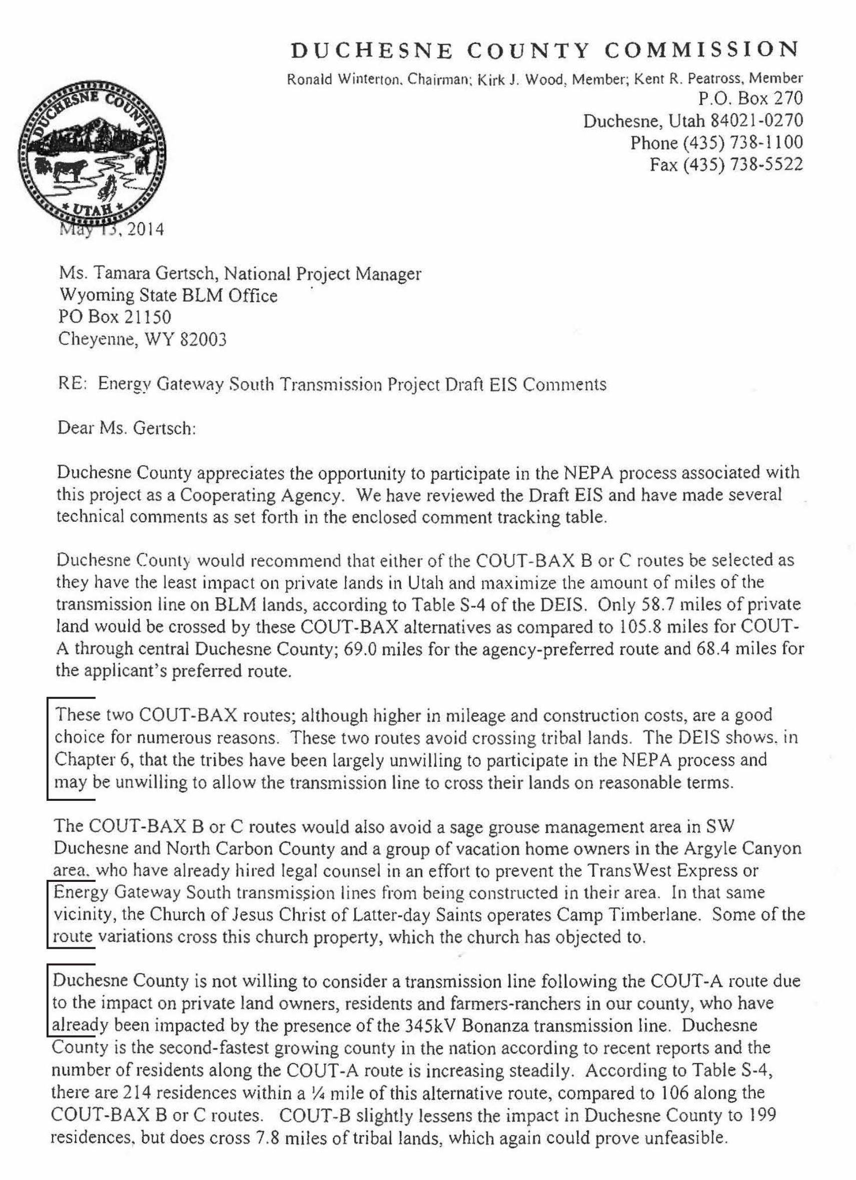
Gary J. Anderson
Randy A. Brailsford
Kirk L. Christensen
David R. Cox
Randy Crozier
Michael K. Davis
Tom Dolan
Claude R. Hicken
Jani Iwamoto
George R. Jackson
Dallin W. Jensen
Michael H. Jensen
Michael J. McKee
Rondal R. McKee
Kent R. Peatross
Stanley R. Smith
Gawain Snow
Mark Wilson

Response(s)

C3a Comment and route preference noted.

Comment(s)

C4 **Duchesne County Commission**



DUCHESNE COUNTY COMMISSION
Ronald Winterton, Chairman; Kirk J. Wood, Member; Kent R. Peatross, Member
P.O. Box 270
Duchesne, Utah 84021-0270
Phone (435) 738-1100
Fax (435) 738-5522

May 13, 2014

Ms. Tamara Gertsch, National Project Manager
Wyoming State BLM Office
PO Box 21150
Cheyenne, WY 82003

RE: Energy Gateway South Transmission Project Draft EIS Comments

Dear Ms. Gertsch:

Duchesne County appreciates the opportunity to participate in the NEPA process associated with this project as a Cooperating Agency. We have reviewed the Draft EIS and have made several technical comments as set forth in the enclosed comment tracking table.

Duchesne County would recommend that either of the COUT-BAX B or C routes be selected as they have the least impact on private lands in Utah and maximize the amount of miles of the transmission line on BLM lands, according to Table S-4 of the DEIS. Only 58.7 miles of private land would be crossed by these COUT-BAX alternatives as compared to 105.8 miles for COUT-A through central Duchesne County; 69.0 miles for the agency-preferred route and 68.4 miles for the applicant's preferred route.

C4a These two COUT-BAX routes; although higher in mileage and construction costs, are a good choice for numerous reasons. These two routes avoid crossing tribal lands. The DEIS shows, in Chapter 6, that the tribes have been largely unwilling to participate in the NEPA process and may be unwilling to allow the transmission line to cross their lands on reasonable terms.

The COUT-BAX B or C routes would also avoid a sage grouse management area in SW Duchesne and North Carbon County and a group of vacation home owners in the Argyle Canyon area, who have already hired legal counsel in an effort to prevent the TransWest Express or C4b Energy Gateway South transmission lines from being constructed in their area. In that same vicinity, the Church of Jesus Christ of Latter-day Saints operates Camp Timberlane. Some of the route variations cross this church property, which the church has objected to.

C4c Duchesne County is not willing to consider a transmission line following the COUT-A route due to the impact on private land owners, residents and farmers-ranchers in our county, who have already been impacted by the presence of the 345kV Bonanza transmission line. Duchesne County is the second-fastest growing county in the nation according to recent reports and the number of residents along the COUT-A route is increasing steadily. According to Table S-4, there are 214 residences within a ¼ mile of this alternative route, compared to 106 along the COUT-BAX B or C routes. COUT-B slightly lessens the impact in Duchesne County to 199 residences, but does cross 7.8 miles of tribal lands, which again could prove unfeasible.

Response(s)

C4a The BLM and USFS met in government-to-government consultation with the Ute Business Committee of the Ute Tribe of the Uintah Ouray Indian Reservation in August 2014. At the meeting, BLM provided an update to the Ute Business Committee on the status of the Project. The Applicant also attended the meeting. The agencies and the Applicant received input from the Ute Business Committee on how to move forward with the Project.

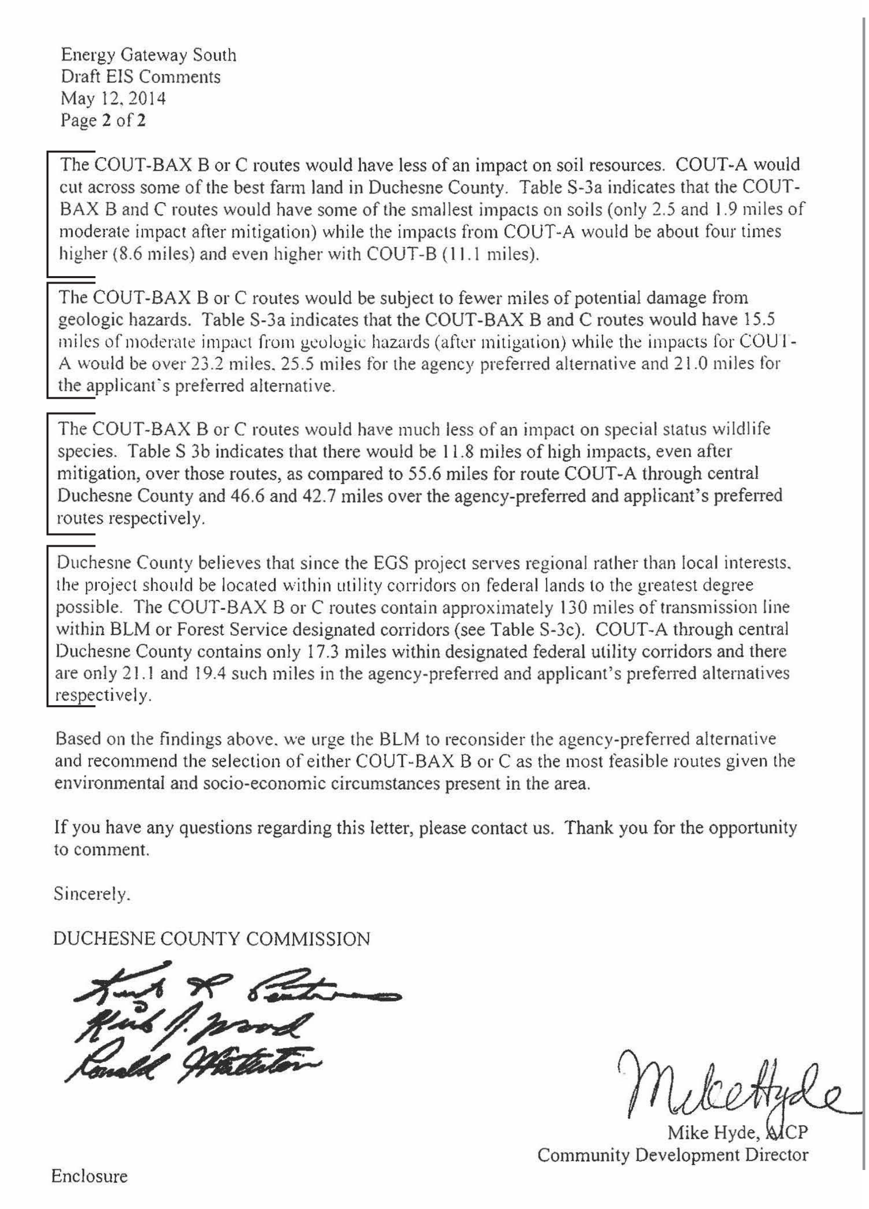
C4b To establish the resource database for analysis for the EIS, the EIS team gathered, compiled, and analyzed existing data provided by federal, state, and local agencies and other credible public sources of information. If data indicated the presence of a camp, the facility was avoided to the extent practicable and/or located in such a way that activities at the facility are not affected (visually or physically). However, in some cases, data received did not indicate the presence of recreational uses, particularly on private land where specific uses may not be evident in the public data. Such is the case with Camp Timberlane and other camps administered by the Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints (CPB).

Regarding Camp Timberlane, when data were compiled, data received for the area indicated privately owned parcels and did not indicate existence of an organized recreational youth camp. Comments on the Draft EIS from the CPB provided information to the EIS team of the recreational use of the area. In response to this new information, representatives of the CPB, Applicant, and BLM met in April 2014 to discuss the CPB properties. Subsequently, the Applicant identified alternative route variations in this area that would avoid Camp Timberlane while considering other existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These alternative route variations have been analyzed for the Final EIS and are addressed in Appendix F.

C4c Comment and route preference noted.

Comment(s)

C4 | **Duchesne County Commission (cont.)**



Energy Gateway South
Draft EIS Comments
May 12, 2014
Page **2** of **2**

C4d The COUT-BAX B or C routes would have less of an impact on soil resources. COUT-A would cut across some of the best farm land in Duchesne County. Table S-3a indicates that the COUT-BAX B and C routes would have some of the smallest impacts on soils (only 2.5 and 1.9 miles of moderate impact after mitigation) while the impacts from COUT-A would be about four times higher (8.6 miles) and even higher with COUT-B (11.1 miles).

C4e The COUT-BAX B or C routes would be subject to fewer miles of potential damage from geologic hazards. Table S-3a indicates that the COUT-BAX B and C routes would have 15.5 miles of moderate impact from geologic hazards (after mitigation) while the impacts for COUT-A would be over 23.2 miles, 25.5 miles for the agency preferred alternative and 21.0 miles for the applicant's preferred alternative.

C4f The COUT-BAX B or C routes would have much less of an impact on special status wildlife species. Table S 3b indicates that there would be 11.8 miles of high impacts, even after mitigation, over those routes, as compared to 55.6 miles for route COUT-A through central Duchesne County and 46.6 and 42.7 miles over the agency-preferred and applicant's preferred routes respectively.

C4g Duchesne County believes that since the EGS project serves regional rather than local interests, the project should be located within utility corridors on federal lands to the greatest degree possible. The COUT-BAX B or C routes contain approximately 130 miles of transmission line within BLM or Forest Service designated corridors (see Table S-3c). COUT-A through central Duchesne County contains only 17.3 miles within designated federal utility corridors and there are only 21.1 and 19.4 such miles in the agency-preferred and applicant's preferred alternatives respectively.

Based on the findings above, we urge the BLM to reconsider the agency-preferred alternative and recommend the selection of either COUT-BAX B or C as the most feasible routes given the environmental and socio-economic circumstances present in the area.

If you have any questions regarding this letter, please contact us. Thank you for the opportunity to comment.

Sincerely,

DUCHESNE COUNTY COMMISSION

Kent R. Peterson
Kirk J. Wood
Ronald Winterton

Mike Hyde
Mike Hyde, AICP
Community Development Director

Enclosure

Response(s)

C4d Comment and route preference noted.

C4e Comment and route preference noted.

C4f Comment and route preference noted.

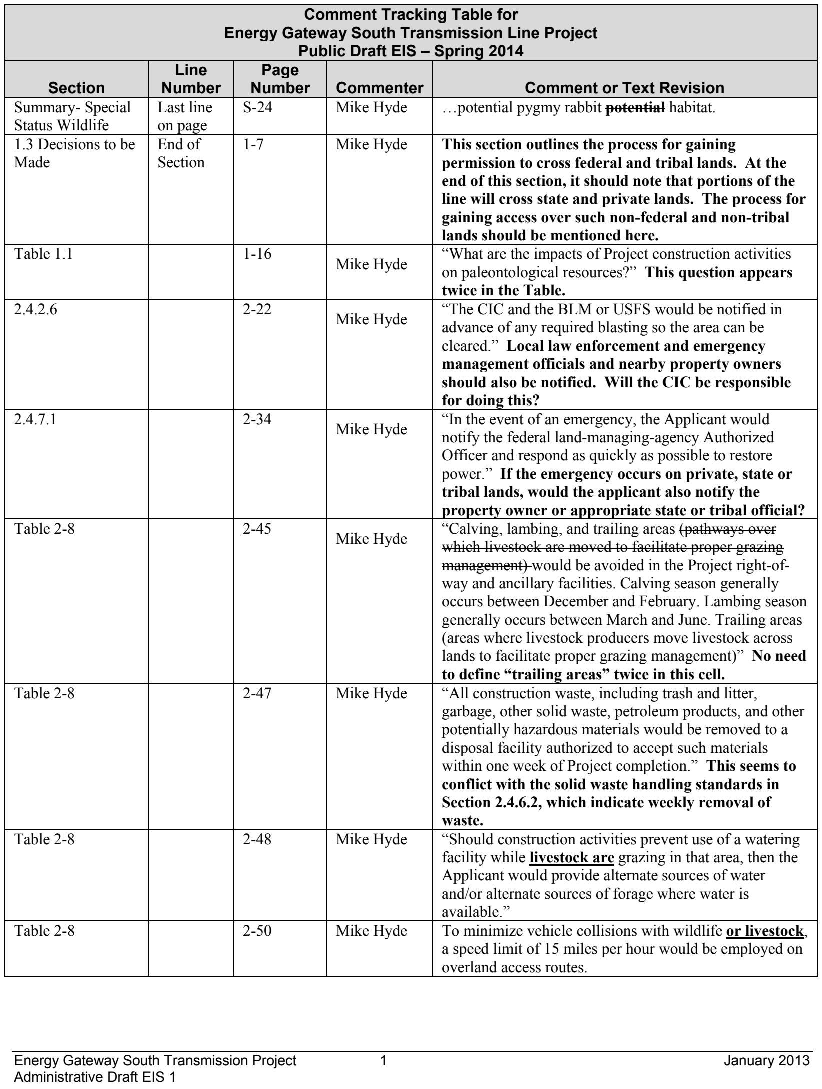
C4g The first two criteria considered by the Applicant when identifying preliminary alternative routes during their initial feasibility studies conducted by the Applicant were (1) presence of designated or proposed utility corridors and (2) presence of other existing linear facilities. During their review of the alternative routes, the BLM and USFS have endeavored to maintain the use of federally designated utility corridors and the use of federal lands to the extent possible (i.e., where suitable when reviewing for environmental, geographic, or engineering/electric system reliability concerns). However, federal land is not contiguous. Ultimately, the BLM and USFS selection of the preferred alternative must be based on resource sensitivities and resource issues.

Comment(s)

Response(s)

C4

Duchesne County Commission (cont.)



Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
Summary- Special Status Wildlife	Last line on page	S-24	Mike Hyde	…potential pygmy rabbit ~~potential~~ habitat.
1.3 Decisions to be Made	End of Section	1-7	Mike Hyde	**This section outlines the process for gaining permission to cross federal and tribal lands. At the end of this section, it should note that portions of the line will cross state and private lands. The process for gaining access over such non-federal and non-tribal lands should be mentioned here.**
Table 1.1		1-16	Mike Hyde	"What are the impacts of Project construction activities on paleontological resources?" **This question appears twice in the Table.**
2.4.2.6		2-22	Mike Hyde	"The CIC and the BLM or USFS would be notified in advance of any required blasting so the area can be cleared." **Local law enforcement and emergency management officials and nearby property owners should also be notified. Will the CIC be responsible for doing this?**
2.4.7.1		2-34	Mike Hyde	"In the event of an emergency, the Applicant would notify the federal land-managing-agency Authorized Officer and respond as quickly as possible to restore power." **If the emergency occurs on private, state or tribal lands, would the applicant also notify the property owner or appropriate state or tribal official?**
Table 2-8		2-45	Mike Hyde	"Calving, lambing, and trailing areas ~~(pathways over which livestock are moved to facilitate proper grazing management)~~ would be avoided in the Project right-of-way and ancillary facilities. Calving season generally occurs between December and February. Lambing season generally occurs between March and June. Trailing areas (areas where livestock producers move livestock across lands to facilitate proper grazing management)" **No need to define "trailing areas" twice in this cell.**
Table 2-8		2-47	Mike Hyde	"All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials within one week of Project completion." **This seems to conflict with the solid waste handling standards in Section 2.4.6.2, which indicate weekly removal of waste.**
Table 2-8		2-48	Mike Hyde	"Should construction activities prevent use of a watering facility while **livestock are** grazing in that area, then the Applicant would provide alternate sources of water and/or alternate sources of forage where water is available."
Table 2-8		2-50	Mike Hyde	To minimize vehicle collisions with wildlife **or livestock**, a speed limit of 15 miles per hour would be employed on overland access routes.

Energy Gateway South Transmission Project 1 January 2013
Administrative Draft EIS 1

Comment(s)

Response(s)

C4 **Duchesne County Commission (cont.)**

Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

	Section	Line Number	Page Number	Commenter	Comment or Text Revision
	Section 2.6.1.3		2-124	Mike Hyde	Additional transmission capacity of the existing transmission paths in the **EIS** Project area ~~EISs~~ **does** not exist.
C4h	Map 322		3-15	Mike Hyde	The location of the Fruitland AQ monitoring station is incorrect on this map. Fruitland is located on Highway 40 near the Wasatch County line.
C4i	Section 3.2.2.1.1		3-60	Mike Hyde	"The protection of transmission lines from landslides, unstable soils, flooding, and other hazards is regulated by 49 CFR 192.317, which states "The operator must take all practicable steps to protect each transmission line or main from washouts, floods, unstable soil, landslides, or other hazards that may cause the ~~pipeline~~ **transmission line** to move or to sustain abnormal loads."
			3-101	Mike Hyde	"Route Variation COUT-C-1 in Utah crosses 1.8 miles more of soils highly susceptible to water erosion. Route Variations COUT-C-2 and COUT-C-4 in Utah cross 1.6 miles more of soils highly susceptible to water erosion." **What were the results for COUT-C-3 and COUT-C-5?**
			3-128	Mike Hyde	"In Wyoming, Route Variations WYCO-C-1, WYCO-C-2, and WYCO-C-3 would be anticipated to have similar impacts on paleontological resources as Alternative WYCO-B **[should this be WYCO-C]?** with minor variations in the extent of the areas with high or moderate sensitivity (Table 3-34)."
			3-128	Mike Hyde	"In Colorado, Route Variations WYCO-C-1, WYCO-C-2, WYCO-C-3 would have similar impacts on paleontological resources as Alternative WYCO-B **[should this be WYCO-C]?** with minor variations in the extent of the areas with high or moderate sensitivity (Table 3-34)."
	3.2.4.1.1		3-144	Mike Hyde	"3.2.3.1.1 Regulatory Framework" (should be 3.2.4.1.1)
C4j	3.2.4.1.1		3-146	Mike Hyde	"National Flood Insurance Program. The National Flood Insurance Program is administered by Federal Emergency Management Area (FEMA), a component of the U.S. Department of Homeland Security. In support of the National Flood Insurance Program, FEMA identifies flood hazard areas throughout the United States, including Special Flood Hazard Areas, which are defined as areas of land that would be inundated by a flood having a 1 percent chance of occurring in any given year (previously referred to as the base flood or 100-year flood). Development may take place within Special Flood Hazard Areas, provided development complies with local floodplain management ordinances, which must meet the minimum federal requirements." **It may be good to note here that not all jurisdictions along the alternative routes have been mapped for flood zones under the NFIP. Duchesne County is one such jurisdiction that has yet to receive flood zone mapping.**

Energy Gateway South Transmission Project 2 January 2013
Administrative Draft EIS 1

C4h The referenced map has been corrected.

C4i Section 3.2.2.5.1 was corrected as requested.

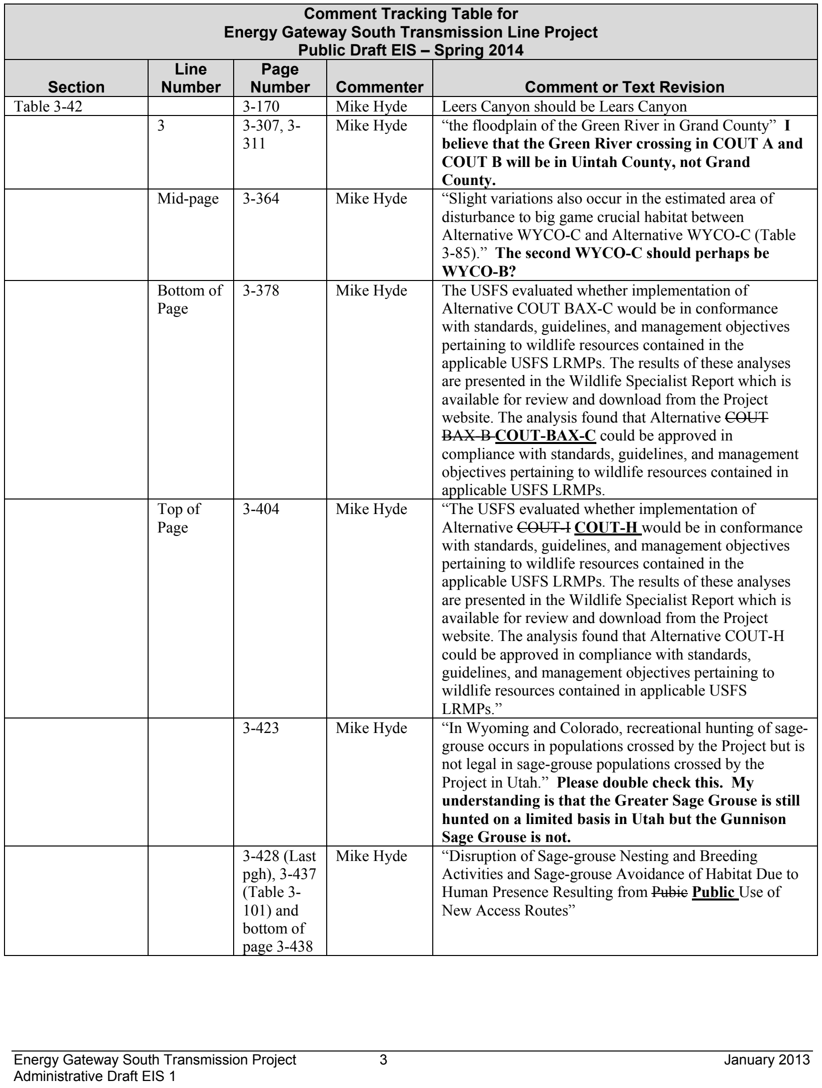
C4j Text added as recommended.

Comment(s)

Response(s)

C4

Duchesne County Commission (cont.)



Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

	Section	Line Number	Page Number	Commenter	Comment or Text Revision
	Table 3-42		3-170	Mike Hyde	Leers Canyon should be Lears Canyon
C4k		3	3-307, 3-311	Mike Hyde	"the floodplain of the Green River in Grand County" **I believe that the Green River crossing in COUT A and COUT B will be in Uintah County, not Grand County.**
		Mid-page	3-364	Mike Hyde	"Slight variations also occur in the estimated area of disturbance to big game crucial habitat between Alternative WYCO-C and Alternative WYCO-C (Table 3-85)." **The second WYCO-C should perhaps be WYCO-B?**
		Bottom of Page	3-378	Mike Hyde	The USFS evaluated whether implementation of Alternative COUT BAX-C would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs. The results of these analyses are presented in the Wildlife Specialist Report which is available for review and download from the Project website. The analysis found that Alternative ~~COUT BAX-B~~ **COUT-BAX-C** could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs.
		Top of Page	3-404	Mike Hyde	"The USFS evaluated whether implementation of Alternative ~~COUT-I~~ **COUT-H** would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs. The results of these analyses are presented in the Wildlife Specialist Report which is available for review and download from the Project website. The analysis found that Alternative COUT-H could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs."
C4l			3-423	Mike Hyde	"In Wyoming and Colorado, recreational hunting of sage-grouse occurs in populations crossed by the Project but is not legal in sage-grouse populations crossed by the Project in Utah." **Please double check this. My understanding is that the Greater Sage Grouse is still hunted on a limited basis in Utah but the Gunnison Sage Grouse is not.**
			3-428 (Last pgh), 3-437 (Table 3-101) and bottom of page 3-438	Mike Hyde	"Disruption of Sage-grouse Nesting and Breeding Activities and Sage-grouse Avoidance of Habitat Due to Human Presence Resulting from ~~Pubic~~ **Public** Use of New Access Routes"

Energy Gateway South Transmission Project 3 January 2013
Administrative Draft EIS 1

C4k Text has been edited.

C4l Recreational hunting of sage-grouse is legal in parts of Utah (maps and descriptions of locations are available in the Utah Division of Wildlife Resources 2013-2014 Upland Game and Turkey Guidebook at http://wildlife.utah.gov/guidebooks/2013_pdfs/2013-14_upland-turkey.pdf) but not in the populations crossed by the Project. The Diamond/Blue Mountain hunting areas in Uintah county are located in the Project area, but the Diamond Mountain sage-grouse population is not crossed by any of the alternative routes considered for the Project.

Comment(s)

Response(s)

C4

Duchesne County Commission (cont.)

Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

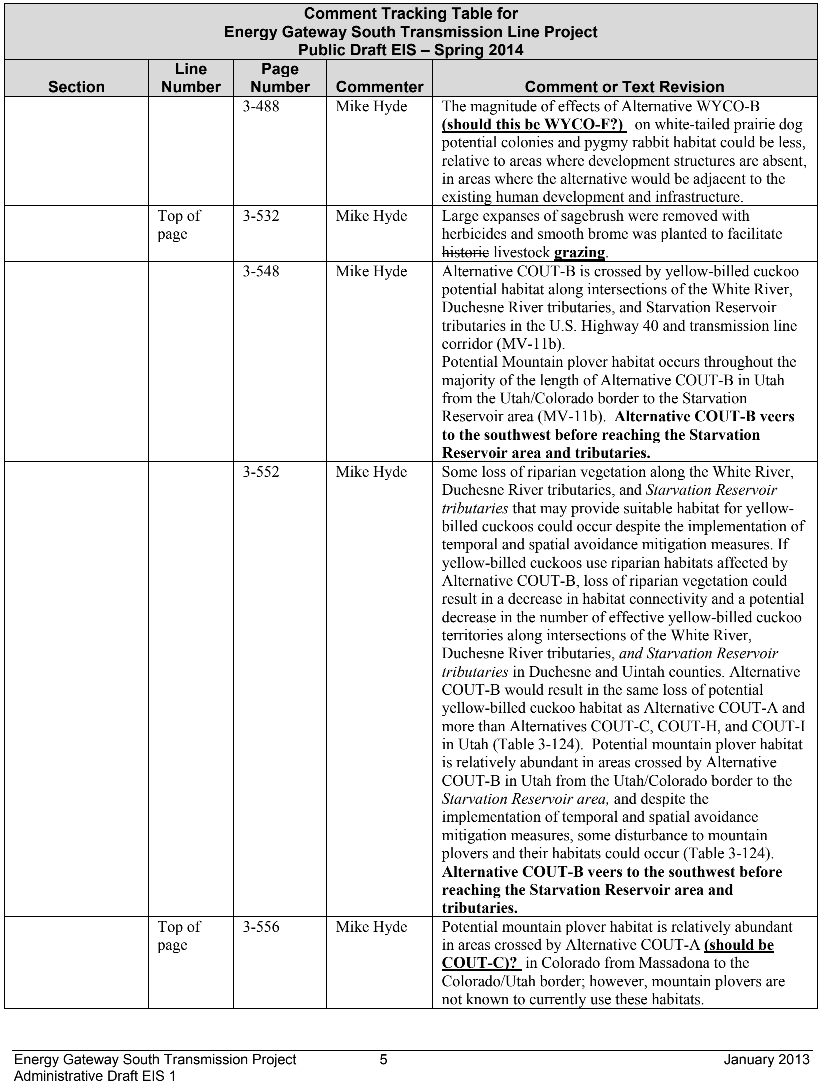
Section	Line Number	Page Number	Commenter	Comment or Text Revision
	Bottom of Page	3-438	Mike Hyde	"Effects on sage-grouse and sage-grouse habitat use associated with vehicle noise and increased human presence resulting from ~~pubie~~ **public** use of new access routes would be similar to the direct effects of construction on sage-grouse habitat use and nesting and breeding activities."
		3-475	Mike Hyde	Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-B **(should this be WYCO-C?)** in Wyoming, and despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-109).
		3-476	Mike Hyde	The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative WYCO-B **(should this be WYCO-C?)** during the past 5 years, and percentage of the average Wyoming statewide sage-grouse male lek counts that this represents, are presented in Table 3-110.
		3-476	Mike Hyde	Due to the disperse nature of prairie dog towns, the area in the Shirley Basin black-footed ferret management area potentially affected by Alternative WYCO-B **(should this be WYCO-C?)** is unlikely to support black-footed ferret.
		3-477	Mike Hyde	Potential mountain plover habitat occurs throughout the majority of the length of Alternative WYCO-B **(should this be WYCO-D?)** and route variations in Wyoming, with exception of the portion of Alternative WYCO-D that heads south at Wamsutter and the area just north of Baggs (MV-11a).
		3-479	Mike Hyde	The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative WYCO-B **(should this be WYCO-D?)** during the past 5 years, and percentage of the average Wyoming statewide sage-grouse male lek counts that this represents, are presented in Table 3-110.
		3-482	Mike Hyde	(i.e., the Wolf ~~Creed~~ **Creek** reintroduction management area)
		3-487	Mike Hyde	Alternative WYCO-F would result in a loss of more potential yellow-billed cuckoo habitat than Alternative WYCO-C but less than Alternative WYCO-F **(should this be WYCO-B?)** and considerably less than Alternative WYCO-D in Wyoming (Table 3-109).
		3-487	Mike Hyde	The estimated area of sage-grouse core areas, as well as the estimated area of sage-grouse habitat affected within 4 miles of leks in Wyoming by Alternative WYCO-B **(should this be WYCO-F?)** is presented in Table 3-105.

Comment(s)

Response(s)

C4

Duchesne County Commission (cont.)



Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
		3-488	Mike Hyde	The magnitude of effects of Alternative WYCO-B **(should this be WYCO-F?)** on white-tailed prairie dog potential colonies and pygmy rabbit habitat could be less, relative to areas where development structures are absent, in areas where the alternative would be adjacent to the existing human development and infrastructure.
	Top of page	3-532	Mike Hyde	Large expanses of sagebrush were removed with herbicides and smooth brome was planted to facilitate ~~historic~~ livestock **grazing**.
		3-548	Mike Hyde	Alternative COUT-B is crossed by yellow-billed cuckoo potential habitat along intersections of the White River, Duchesne River tributaries, and Starvation Reservoir tributaries in the U.S. Highway 40 and transmission line corridor (MV-11b). Potential Mountain plover habitat occurs throughout the majority of the length of Alternative COUT-B in Utah from the Utah/Colorado border to the Starvation Reservoir area (MV-11b). **Alternative COUT-B veers to the southwest before reaching the Starvation Reservoir area and tributaries.**
		3-552	Mike Hyde	Some loss of riparian vegetation along the White River, Duchesne River tributaries, and *Starvation Reservoir tributaries* that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. If yellow-billed cuckoos use riparian habitats affected by Alternative COUT-B, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along intersections of the White River, Duchesne River tributaries, *and Starvation Reservoir tributaries* in Duchesne and Uintah counties. Alternative COUT-B would result in the same loss of potential yellow-billed cuckoo habitat as Alternative COUT-A and more than Alternatives COUT-C, COUT-H, and COUT-I in Utah (Table 3-124). Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-B in Utah from the Utah/Colorado border to the *Starvation Reservoir area,* and despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-124). **Alternative COUT-B veers to the southwest before reaching the Starvation Reservoir area and tributaries.**
	Top of page	3-556	Mike Hyde	Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-A **(should be COUT-C)?** in Colorado from Massadona to the Colorado/Utah border; however, mountain plovers are not known to currently use these habitats.

Energy Gateway South Transmission Project 5 January 2013
Administrative Draft EIS 1

Comment(s)

C4 | **Duchesne County Commission (cont.)**

Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
		3-557	Mike Hyde	Mountain plover potential habitat occurs throughout the majority of the length of Alternative COUT-C and its route variations in Utah from the Utah/Colorado border to the *Starvation Reservoir area* (MV-11b). **Alternative COUT-C is nowhere near the Starvation Reservoir area.**
		3-559	Mike Hyde	Alternative COUT-B **(should be COUT-C)?** would result in modification of less potential Mexican spotted owl habitat than COUT-I, and more than Alternatives COUT-A and COUT-B in Utah (Table 3-124).
		3-562	Mike Hyde	Mountain plover potential habitat occurs throughout the majority of the length of Alternative COUT-H in Utah from the Utah/Colorado border to the *Starvation Reservoir area* (MV-11b). **Alternative COUT-C is nowhere near the Starvation Reservoir area.**
		3-563	Mike Hyde	Alternative COUT-C **(should be COUT-H)?** would have the least high residual impacts compared to most other COUT alternative routes and similar moderate residual impacts compared to other COUT routes in Utah (Table 3-123).
		3-564	Mike Hyde	The estimated area of sage-grouse occupied habitat, affected statewide by Alternative COUT-A **(should be COUT-H)?** is presented in Table 3-120 and the extent of habitat affected in each Utah population crossed in presented in Table 3-126.
		3-568	Mike Hyde	Some of the impacts on sage-grouse associated with Alternative COUT-H **(should be COUT-I)?** in Utah would occur in areas where the alternative is parallel to an existing high-voltage transmission line (345kV steel-lattice structure) that has degraded the existing quality of sage-grouse habitats.
		3-568	Mike Hyde	The estimated area of sage-grouse occupied habitat, affected statewide by Alternative COUT-A **(should be COUT-I)?** is presented in Table 3-120 and the extent of habitat affected in each Utah population crossed in presented in Table 3-126.
		3-585	Mike Hyde	Additionally, bluehead sucker (Castostomus discobolus), flannelmouth sucker (C. latipinnis), and roundtail chub (Gila robusta) have existing conservation *easements* **(should be agreements?)** in Utah and are listed sensitive species.
		3-604	Mike Hyde	Route Variation WYCO-F-1 in Wyoming shares the same route alignment as Alternative WYCO-F in Wyoming and could affect the same fish and aquatic resources. **(What about WYCO-F-2 and WYCO-F-3)?**
Table 3-148		3-649	Mike Hyde	Golden Eagle Subdivision, 9 40-acre lots, one existing residence; located approximately 24 miles west of Duchesne **This subdivision is much closer to Duchesne, approx.. 6 miles**

C4m (marks the Table 3-148 row)

Energy Gateway South Transmission Project 6 January 2013
Administrative Draft EIS 1

Response(s)

C4m Comment noted. The distance description for the Golden Eagle Subdivision has been changed from 24 miles to 6 miles in the Final EIS.

Comment(s)

C4 Duchesne County Commission (cont.)

Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

	Section	Line Number	Page Number	Commenter	Comment or Text Revision
C4n	Table 3-153		3-662	Mike Hyde	The Zephyr transmission line is not mentioned as a future project in this table.
C4o	Table 3-153		3-663	Mike Hyde	The Uintah Basin Railroad is not mentioned as a future project in this table (it would be crossed by COUT-B, COUT-C,COUT-H and COUT-I
C4p			3-665	Mike Hyde	Duchesne County has also incorporated provisions for the Uintah Basin Energy Zone in its land use plan
C4q			3-696 and elsewhere	Mike Hyde	Preliminary and final plats generally pertain to subdivisions but not to utility projects
			3-703	Mike Hyde	Alternative WYCO-F crosses grazing allotments, flood-control facility, pipeline and pipeline pump station, transmission line, and vacant/undeveloped land. Alternative WYCO-B **(should be WYCO F?)** crosses the following authorized projects:
C4r			3-738 and elsewhere	Mike Hyde	Land zoned for agriculture in Duchesne County is not limited to agricultural use; it also allows residential use and commercial use with permission of the Planning Commission. This may be true in other jurisdictions. This may increase the level of impact of the transmission line above the low level in some locations.
			3-789	Mike Hyde	Visual impacts from Alternative COUT BAX-C **(should be COUT BAX E?)** crossing the SRMAs are discussed in Section 3.2.16.
			3-814	Mike Hyde	Railroads An inventory of railroads crossed by the reference centerlines for the alternative routes and route variations were identified using the Federal Railroad Authority database (Federal Railroad Authority 2008). These include railroads operated by the Union Pacific Railroad in Wyoming, Colorado, and Utah; WFUX in Colorado and Utah; and the Utah Railway Company in Utah. The number of railroad crossings identified are provided in 3-197 through 3-199. **Would this be a good place to mention the proposed Uintah Basin Railroad, which is currently being studied?**
C4s	Table 3-193		3-815	Mike Hyde	The table does not mention the Thunder Ridge Airpark airstrip in the Bandanna Ranch northwest of Fruitland in Duchesne County. It is close to being within the two mile corridor of COUT- A near segment U-426
			3-834	Mike Hyde	Alternative COUT-H **(should be COUT-I?)** in Utah crosses railroads northeast of Bonanza, Utah (Link U242), southwest of Wellington, Utah (Link U494), and north or Nephi, Utah (Link U650).
	3.2.13.1		3-838	Mike Hyde	"Special designations are created to protect values and land uses unique to an area, which typically require a more intensive management emphasis than is applied to surrounding public land." **This sentence is repetitious of text in the same paragraph.**

Energy Gateway South Transmission Project 7 January 2013
Administrative Draft EIS 1

Response(s)

C4n Because the Zephyr transmission project does not have an active right-of-way application with the BLM or USFS, that project is not considered reasonably foreseeable and is not included in the analysis.

C4o The Uintah Basin Railroad project will not be added because the project does not meet the definition for a reasonably foreseeable future action, which is a proposed project or action that has either applied for a permit from local, state, or federal authorities or which is publicly known. Because the Uintah Basin Railroad project is only in the feasibility stage and does not have an active right-of-way application with the BLM or USFS, it will not be added to the cumulative impacts analysis at this time.

C4p Duchesne County has been added to the Energy Zones discussion in Section 3.2.11 under the Zoning and General Plan Management Direction subsection.

C4q The development status codes (e.g., preliminary and final plat) were used for all authorized and future projects as a way to generalize the status of the varying projects being analyzed in the EIS. The development status code was used to aid in the determination of the level of initial and residual impacts.

C4r Based on comments received, the analysis of zoning and general plan management direction is modified in the Final EIS. That is, instead of analyzing the zoning and general plan zones/areas using impacts, the Final EIS discloses mileages of all zones crossed and conducts a preliminary compliance review for all zones based on the code for each jurisdiction. Final permitting decisions will be handled by the Applicant and determined by the jurisdiction crossed.

C4s The Thunder Ridge Airpark airstrip northwest of Fruitland is approximately 2.7 miles north of the reference centerline and 1.6 miles outside of the 2-mile-wide study corridor. Projects outside of the 2-mile-wide corridor are not included in the analysis.

Comment(s)

Response(s)

C4

Duchesne County Commission (cont.)

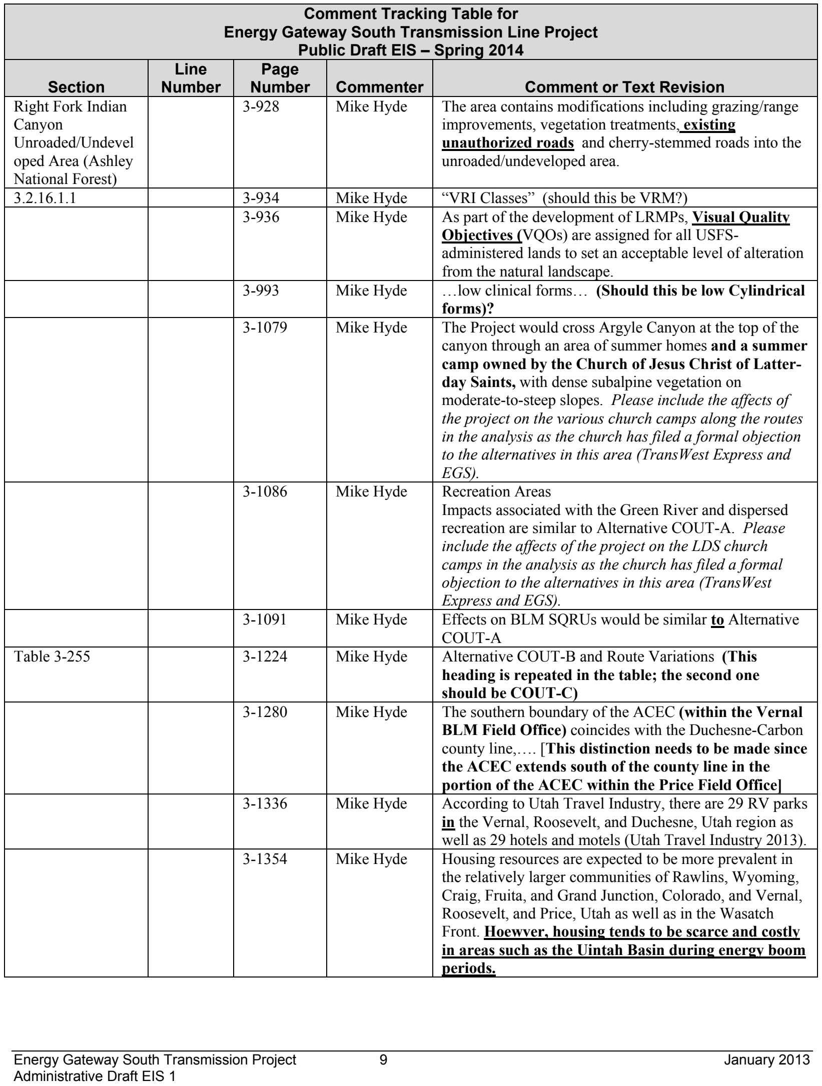
Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
3.2.15.1.1		3-910	Mike Hyde	"The Roadless Area Conservation Rule (RACR) or RACR of 2001 (36 CFR Part 294) was adopted by the USDA to "establish prohibitions on road construction, road reconstruction, and timber harvesting in IRAs on National Forest System lands" (USFS 2001). The rule established criteria for identifying IRAs and prescribed management for road construction and timber harvesting. Pursuant to the Roadless Area Review and Evaluation (RARE) II of 1979, the USFS identified IRAs in national forests across the nation, which were incorporated into the RACR, to prevent the fragmentation of pristine, sensitive, and roadless areas due to road construction or timber harvesting (USFS 2001)." **Suggest that you add the following wording or something similar: Ironically, many of these so-called roadless areas contain existing roads on the ground which have been created by historic use without forest service authorization. These roads may serve to provide access to the transmission line without needing to construct new roads in an IRA.**
IRA 0401010 (Ashley National Forest)		3-926	Mike Hyde	The area contains modifications including the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, **existing unauthorized roads** and boundary and cherry-stemmed roads.
IRA 0401011 (Ashley National Forest)		3-926	Mike Hyde	The area contains modifications include the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, **existing unauthorized roads** and boundary and cherry-stemmed roads.
IRA 0401013 (Ashley National Forest)		3-927	Mike Hyde	The area contains modifications including grazing/range improvements, vegetation treatments, **existing unauthorized roads** and cherry-stemmed roads into the IRA.
IRA 0401012 (Ashley National Forest)		3-927	Mike Hyde	The area contains modifications including grazing/range improvements, vegetation treatments, **existing unauthorized roads** and cherry-stemmed roads into the IRA.
Cottonwood Unroaded/Undeveloped Area (Ashley National Forest)		3-927	Mike Hyde	The area's modifications include the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, **existing unauthorized roads** and boundary and cherry-stemmed roads.
Sowers Canyon East Unroaded/Undeveloped Area (Ashley National Forest)		3-927	Mike Hyde	The area's modifications include the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, **existing unauthorized roads** and boundary and cherry-stemmed roads.

Comment(s)

Response(s)

C4 | **Duchesne County Commission (cont.)**



Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
Right Fork Indian Canyon Unroaded/Undeveloped Area (Ashley National Forest)		3-928	Mike Hyde	The area contains modifications including grazing/range improvements, vegetation treatments**, existing unauthorized roads** and cherry-stemmed roads into the unroaded/undeveloped area.
3.2.16.1.1		3-934	Mike Hyde	“VRI Classes” (should this be VRM?)
		3-936	Mike Hyde	As part of the development of LRMPs, **Visual Quality Objectives (**VQOs) are assigned for all USFS-administered lands to set an acceptable level of alteration from the natural landscape.
		3-993	Mike Hyde	…low clinical forms… **(Should this be low Cylindrical forms)?**
		3-1079	Mike Hyde	The Project would cross Argyle Canyon at the top of the canyon through an area of summer homes **and a summer camp owned by the Church of Jesus Christ of Latter-day Saints,** with dense subalpine vegetation on moderate-to-steep slopes. *Please include the affects of the project on the various church camps along the routes in the analysis as the church has filed a formal objection to the alternatives in this area (TransWest Express and EGS).*
		3-1086	Mike Hyde	Recreation Areas Impacts associated with the Green River and dispersed recreation are similar to Alternative COUT-A. *Please include the affects of the project on the LDS church camps in the analysis as the church has filed a formal objection to the alternatives in this area (TransWest Express and EGS).*
		3-1091	Mike Hyde	Effects on BLM SQRUs would be similar **to** Alternative COUT-A
Table 3-255		3-1224	Mike Hyde	Alternative COUT-B and Route Variations **(This heading is repeated in the table; the second one should be COUT-C)**
		3-1280	Mike Hyde	The southern boundary of the ACEC **(within the Vernal BLM Field Office)** coincides with the Duchesne-Carbon county line,…. [**This distinction needs to be made since the ACEC extends south of the county line in the portion of the ACEC within the Price Field Office]**
		3-1336	Mike Hyde	According to Utah Travel Industry, there are 29 RV parks **in** the Vernal, Roosevelt, and Duchesne, Utah region as well as 29 hotels and motels (Utah Travel Industry 2013).
		3-1354	Mike Hyde	Housing resources are expected to be more prevalent in the relatively larger communities of Rawlins, Wyoming, Craig, Fruita, and Grand Junction, Colorado, and Vernal, Roosevelt, and Price, Utah as well as in the Wasatch Front. **Hoewver, housing tends to be scarce and costly in areas such as the Uintah Basin during energy boom periods.**

Energy Gateway South Transmission Project 9 January 2013
Administrative Draft EIS 1

C4t

Based on comments received on the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

See also the response to Comment C4b.

Comment(s)

Response(s)

C4

Duchesne County Commission (cont.)

Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
C4u Chapter 4		Various	Mike Hyde	Cumulative Effects (Chapter 4) Is the Zephyr Transmission line too premature to include in this section? How about the Tesoro Pipeline, called the Uinta Express, from Duchesne County NW to Salt Lake? Another pipeline project now being planned is from Myton to Wellington (roughly following the Questar pipeline route, transporting upgraded crude to the rail line). This chapter does not mention oil shale and tar sands projects in Uintah County.
Table 4-34		4-68	Mike Hyde	Alternative WYCO-B and Route Variations (**This heading is repeated three times in the table – should be replaced with WYCO-C, WYCO-D, and WYCO-F**
	Last pgh.	4-103	Mike Hyde	The loss of wetland vegetation communities under Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F would contribute to the cumulative loss of ~~water~~ **wetland** vegetation communities in the CIAA. The extent of cumulative development on ~~water~~ **wetland** vegetation communities for all relevant alternative routes is summarized in Table 4-51.
C4v		4-221	Mike Hyde	"…Elk Tracks at Golden Eagle, Silver Moon, Vista Valley, Vonsville, Golden Eagle, Great Basin Estates I, and Cedar Mountain No. 8 and No. 9 in Duchesne County residential developments." **None of these are located in an Industrial area.**
C4w Table 4-116		4-232	Mike Hyde	Labyrinth Canyon SRMA BLM Price Field Office All COUT BAX alternative routes *34,240* 23 3 2 28 *37,175* **How can the remaining available resource be more than the total available resource?** 0.005
C4x Table 4-118		Beginning on 4-247	Mike Hyde	For the Red Rim-Daley Wildlife Habitat Management Area (WHMA), the remaining available resource exceeds the total available resource. For the Adobe Town Wild Horse Herd Management Area, the calculated acreage of the remaining available resource does not seem correct. For the Deerlodge Road entrance to Dinosaur National Monument, the calculated acreage of the remaining available resource does not seem correct.
C4y Table 4-119		Beginning on 4-252	Mike Hyde	For the North Moroni Conservation Easement, the Gordon Creek WMA and the Salt Creek WMA, the calculated acreages of the remaining available resource does not seem correct.

C4u

Because the Zephyr transmission project does not have an active right-of-way application with the BLM or USFS, that project is not considered reasonably foreseeable and is not included in the analysis.

The Tesoro Pipeline project has been added to reasonably foreseeable future actions and is analyzed as part of the cumulative effects analysis in the Final EIS.

The Myton to Wellington pipeline project data was requested, but no response has been received as of September 9, 2014. To proceed with preparation of the EIS, this project will not be included as part of the analysis. However, it will be noted as a potential project in the reasonably foreseeable future actions table in Chapter 4.

Major oil shale and tar sands projects in Uintah County that have been documented and incorporated into the Draft EIS analysis include, but are not limited to, Red Leaf, Enefit American Oil, and TomCo. Other oil shale and tar sand project information is captured in the lease data and other projects identified in Tables 4-1 and 4-2. These projects are discussed where applicable in Section 3.2.11 and throughout Chapter 4.

Uintah County was contacted to identify any additional major oil shale and tar sands projects, but no response has been received as of September 9, 2014. To proceed with preparation of the EIS, no additional projects will be included in the analysis.

C4v References to these residential developments have been removed from this section.

C4w The numbers have been corrected in the Final EIS.

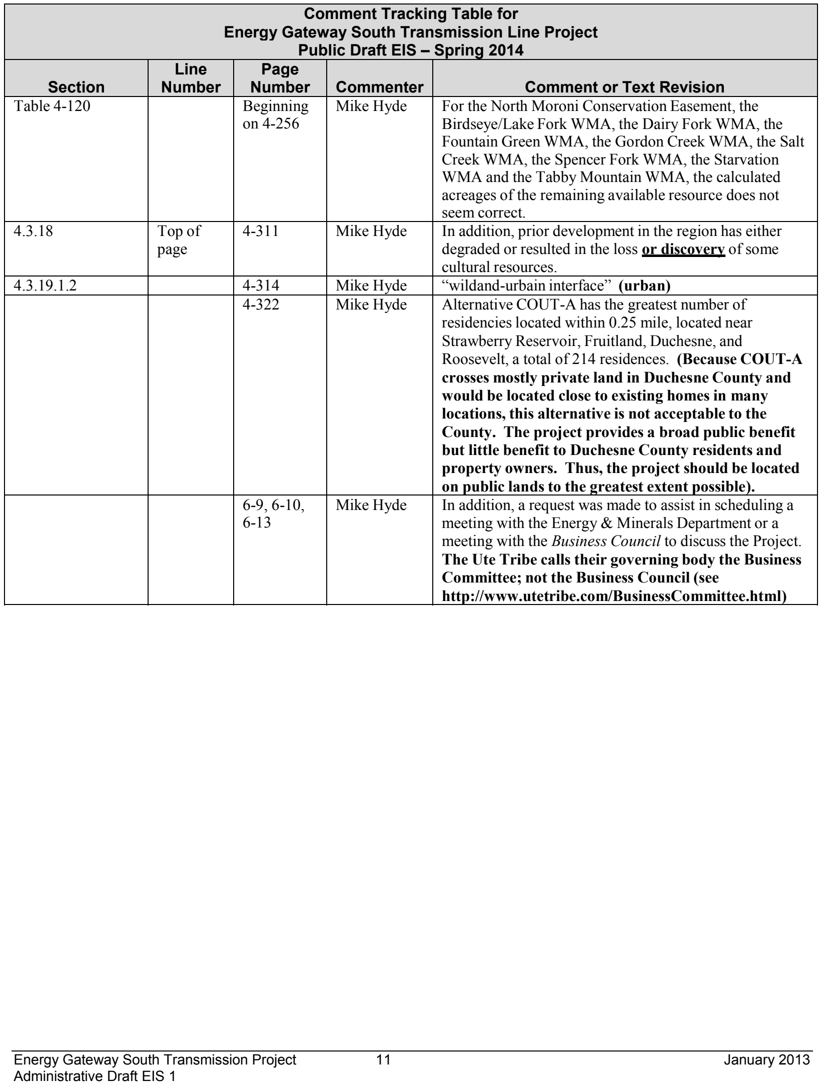
C4x See response to comment C4w.

C4y See response to comment C4w.

Comment(s)

Response(s)

C4 **Duchesne County Commission (cont.)**



Comment Tracking Table for
Energy Gateway South Transmission Line Project
Public Draft EIS – Spring 2014

Section	Line Number	Page Number	Commenter	Comment or Text Revision
Table 4-120		Beginning on 4-256	Mike Hyde	For the North Moroni Conservation Easement, the Birdseye/Lake Fork WMA, the Dairy Fork WMA, the Fountain Green WMA, the Gordon Creek WMA, the Salt Creek WMA, the Spencer Fork WMA, the Starvation WMA and the Tabby Mountain WMA, the calculated acreages of the remaining available resource does not seem correct.
4.3.18	Top of page	4-311	Mike Hyde	In addition, prior development in the region has either degraded or resulted in the loss **or discovery** of some cultural resources.
4.3.19.1.2		4-314	Mike Hyde	"wildand-urbain interface" **(urban)**
		4-322	Mike Hyde	Alternative COUT-A has the greatest number of residencies located within 0.25 mile, located near Strawberry Reservoir, Fruitland, Duchesne, and Roosevelt, a total of 214 residences. **(Because COUT-A crosses mostly private land in Duchesne County and would be located close to existing homes in many locations, this alternative is not acceptable to the County. The project provides a broad public benefit but little benefit to Duchesne County residents and property owners. Thus, the project should be located on public lands to the greatest extent possible).**
		6-9, 6-10, 6-13	Mike Hyde	In addition, a request was made to assist in scheduling a meeting with the Energy & Minerals Department or a meeting with the *Business Council* to discuss the Project. **The Ute Tribe calls their governing body the Business Committee; not the Business Council (see http://www.utetribe.com/BusinessCommittee.html)**

Energy Gateway South Transmission Project 11 January 2013
Administrative Draft EIS 1

C4z

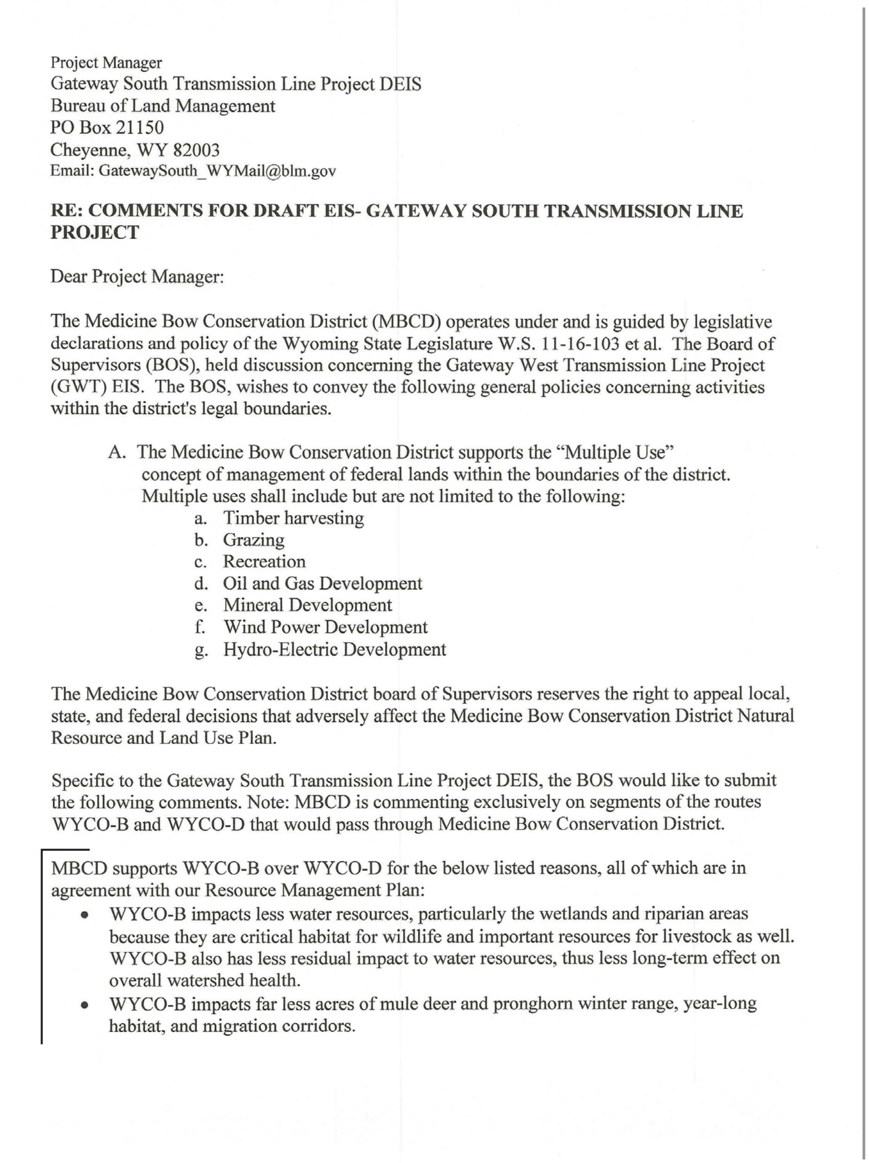
C4aa

C4z See response to comment C4w.

C4aa Comment and route preference noted.

Comment(s)

C5 **Medicine Bow Conservation District**



Project Manager
Gateway South Transmission Line Project DEIS
Bureau of Land Management
PO Box 21150
Cheyenne, WY 82003
Email: GatewaySouth_WYMail@blm.gov

RE: COMMENTS FOR DRAFT EIS- GATEWAY SOUTH TRANSMISSION LINE PROJECT

Dear Project Manager:

The Medicine Bow Conservation District (MBCD) operates under and is guided by legislative declarations and policy of the Wyoming State Legislature W.S. 11-16-103 et al. The Board of Supervisors (BOS), held discussion concerning the Gateway West Transmission Line Project (GWT) EIS. The BOS, wishes to convey the following general policies concerning activities within the district's legal boundaries.

A. The Medicine Bow Conservation District supports the "Multiple Use" concept of management of federal lands within the boundaries of the district. Multiple uses shall include but are not limited to the following:
    a. Timber harvesting
    b. Grazing
    c. Recreation
    d. Oil and Gas Development
    e. Mineral Development
    f. Wind Power Development
    g. Hydro-Electric Development

The Medicine Bow Conservation District board of Supervisors reserves the right to appeal local, state, and federal decisions that adversely affect the Medicine Bow Conservation District Natural Resource and Land Use Plan.

Specific to the Gateway South Transmission Line Project DEIS, the BOS would like to submit the following comments. Note: MBCD is commenting exclusively on segments of the routes WYCO-B and WYCO-D that would pass through Medicine Bow Conservation District.

C5a

MBCD supports WYCO-B over WYCO-D for the below listed reasons, all of which are in agreement with our Resource Management Plan:

- WYCO-B impacts less water resources, particularly the wetlands and riparian areas because they are critical habitat for wildlife and important resources for livestock as well. WYCO-B also has less residual impact to water resources, thus less long-term effect on overall watershed health.
- WYCO-B impacts far less acres of mule deer and pronghorn winter range, year-long habitat, and migration corridors.

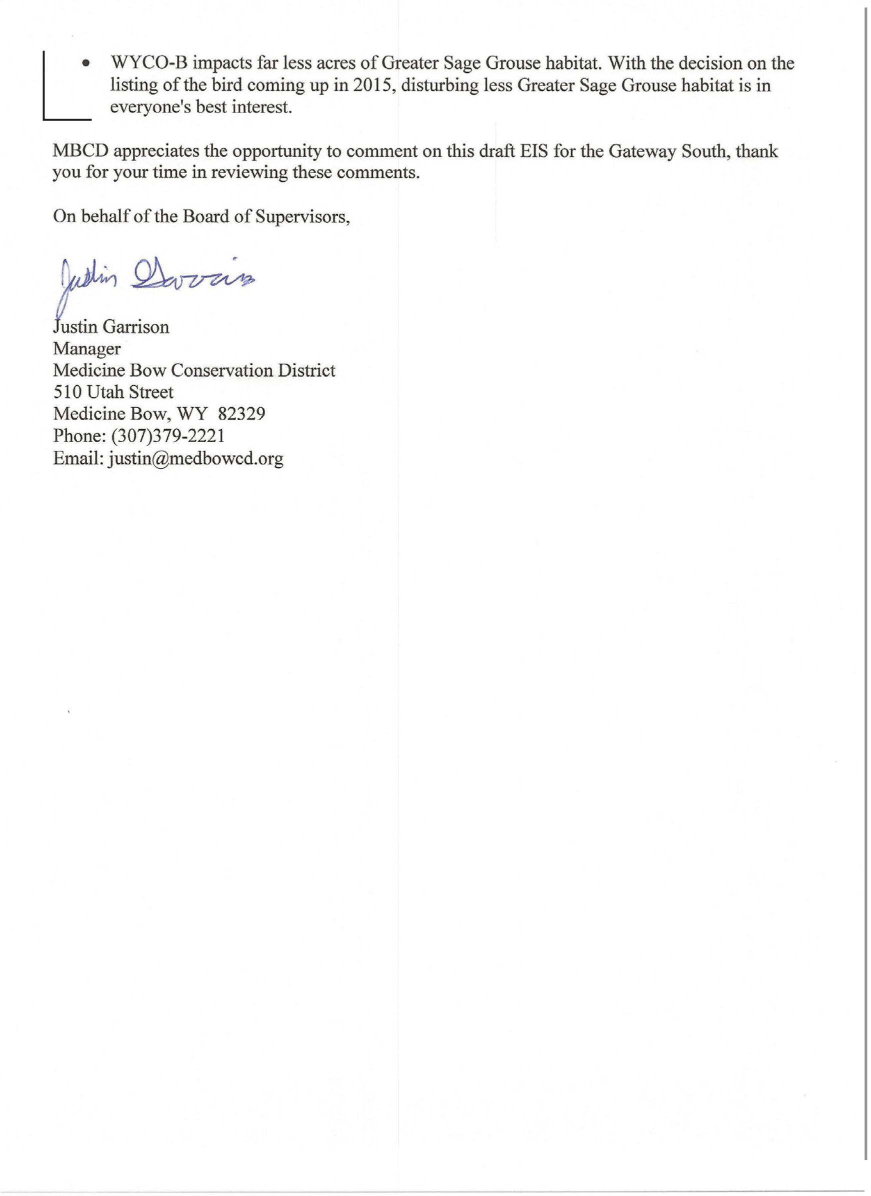
Response(s)

C5a Comment and route preference noted.

Comment(s)

Response(s)

C5 **Medicine Bow Conservation District (cont.)**



C5a
- WYCO-B impacts far less acres of Greater Sage Grouse habitat. With the decision on the listing of the bird coming up in 2015, disturbing less Greater Sage Grouse habitat is in everyone's best interest.

MBCD appreciates the opportunity to comment on this draft EIS for the Gateway South, thank you for your time in reviewing these comments.

On behalf of the Board of Supervisors,

Justin Garrison

Justin Garrison
Manager
Medicine Bow Conservation District
510 Utah Street
Medicine Bow, WY 82329
Phone: (307)379-2221
Email: justin@medbowcd.org

Comment(s)

Response(s)

C6 **Moffat County Commissioners**

From: **Jeff Comstock** <jcomstock@moffatcounty.net>
Date: Tue, May 20, 2014 at 2:05 PM
Subject: Moffat Comments May 2014
To: tgertsch@blm.gov, gatewaysouth_wymail@blm.gov

Tamara,

Attached are Moffat County's Comments on the EGS DEIS. Please note page one of the Moffat County Commissioner's comments offers a position on the Tuttle Easment/Park Service Road situation.

Jeff Comstock, Director

Moffat County Natural Resources Dept.

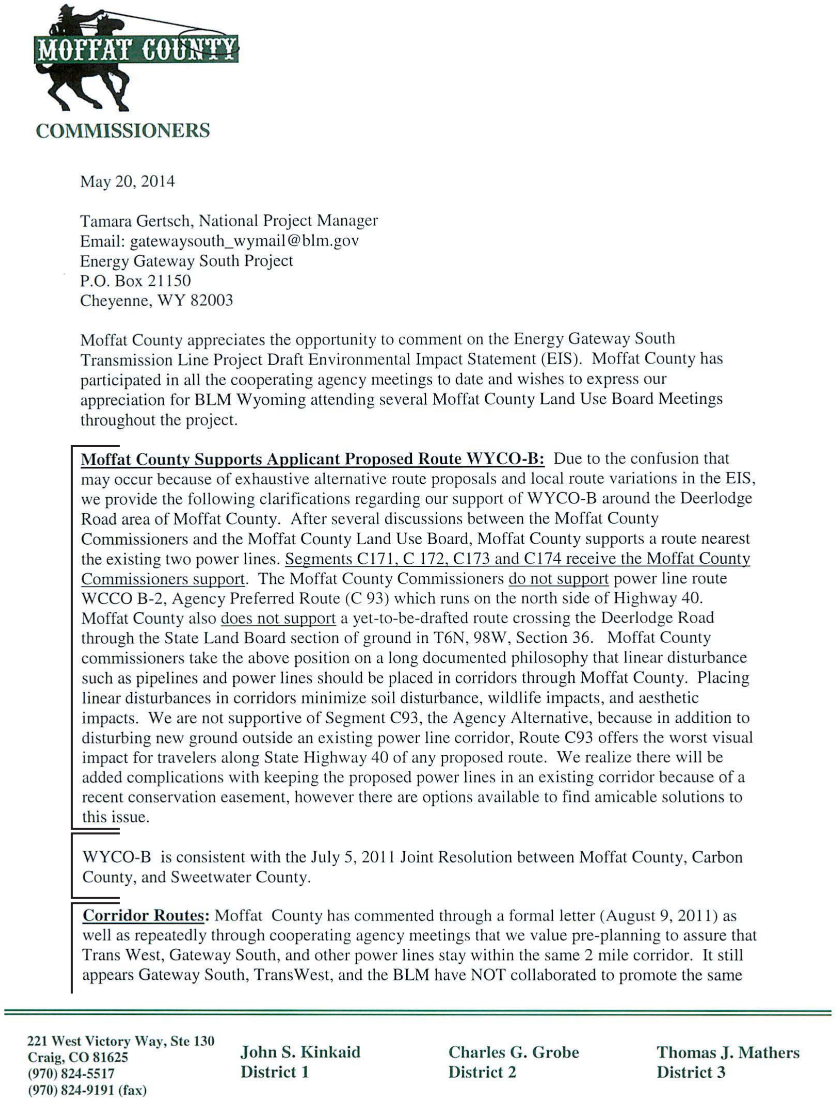
221 W. Victory Way, Suite 130

Craig, Colorado 81625

Phone: (970) 826-3400

Comment(s)

C6 **Moffat County Commissioners (cont.)**



MOFFAT COUNTY
COMMISSIONERS

May 20, 2014

Tamara Gertsch, National Project Manager
Email: gatewaysouth_wymail@blm.gov
Energy Gateway South Project
P.O. Box 21150
Cheyenne, WY 82003

Moffat County appreciates the opportunity to comment on the Energy Gateway South Transmission Line Project Draft Environmental Impact Statement (EIS). Moffat County has participated in all the cooperating agency meetings to date and wishes to express our appreciation for BLM Wyoming attending several Moffat County Land Use Board Meetings throughout the project.

C6a

Moffat County Supports Applicant Proposed Route WYCO-B: Due to the confusion that may occur because of exhaustive alternative route proposals and local route variations in the EIS, we provide the following clarifications regarding our support of WYCO-B around the Deerlodge Road area of Moffat County. After several discussions between the Moffat County Commissioners and the Moffat County Land Use Board, Moffat County supports a route nearest the existing two power lines. Segments C171, C 172, C173 and C174 receive the Moffat County Commissioners support. The Moffat County Commissioners do not support power line route WCCO B-2, Agency Preferred Route (C 93) which runs on the north side of Highway 40. Moffat County also does not support a yet-to-be-drafted route crossing the Deerlodge Road through the State Land Board section of ground in T6N, 98W, Section 36. Moffat County commissioners take the above position on a long documented philosophy that linear disturbance such as pipelines and power lines should be placed in corridors through Moffat County. Placing linear disturbances in corridors minimize soil disturbance, wildlife impacts, and aesthetic impacts. We are not supportive of Segment C93, the Agency Alternative, because in addition to disturbing new ground outside an existing power line corridor, Route C93 offers the worst visual impact for travelers along State Highway 40 of any proposed route. We realize there will be added complications with keeping the proposed power lines in an existing corridor because of a recent conservation easement, however there are options available to find amicable solutions to this issue.

C6b

WYCO-B is consistent with the July 5, 2011 Joint Resolution between Moffat County, Carbon County, and Sweetwater County.

C6c

Corridor Routes: Moffat County has commented through a formal letter (August 9, 2011) as well as repeatedly through cooperating agency meetings that we value pre-planning to assure that Trans West, Gateway South, and other power lines stay within the same 2 mile corridor. It still appears Gateway South, TransWest, and the BLM have NOT collaborated to promote the same

Response(s)

C6a Comment and route preference noted.

C6b Comment noted.

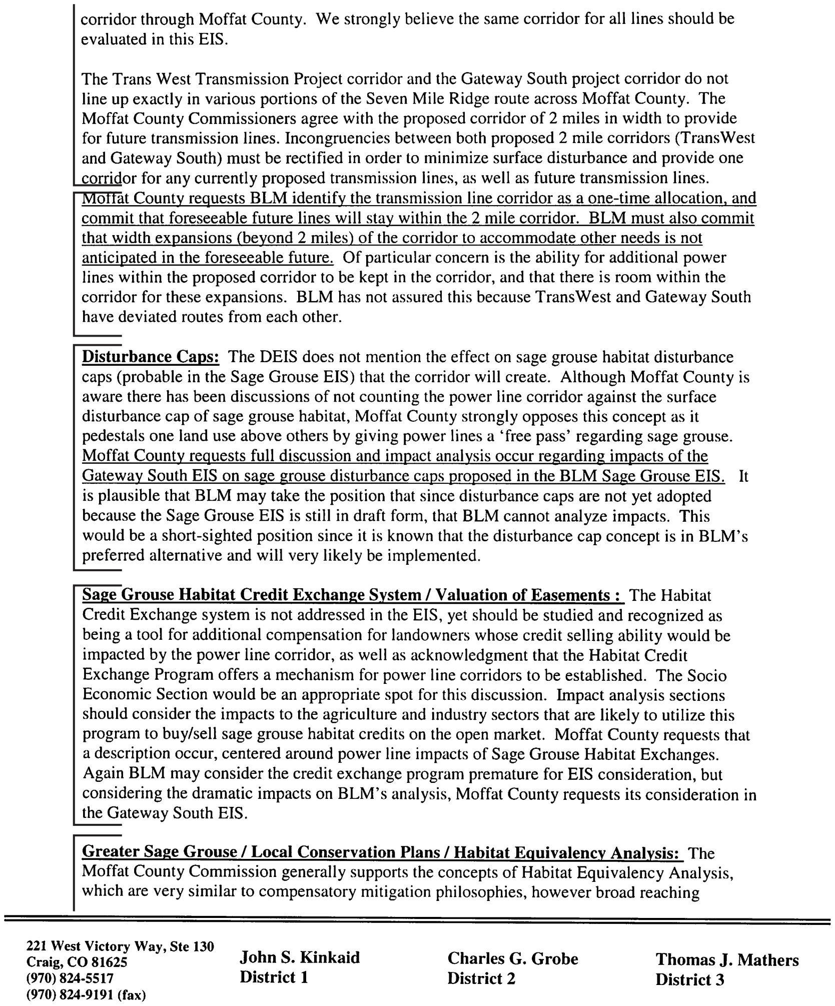
C6c Between preparation of the Draft EIS and the Final EIS, the BLM asked the Applicant to make further refinements based on comments received on the Draft EIS. PacifiCorp/Rocky Mountain Power refined the alignment and incorporated some localized alternative routing variations. Refinements included coordination with the applicant for the TransWest Express transmission project to identify opportunities for colocation of the two projects through several priority areas, including the Seven Mile Ridge area. The refined alignment along the agency-preferred alternative route and the other alternative routes are analyzed in the Final EIS.

In addition, in 2013, the Western Electricity Coordinating Council (WECC) revised its guidelines regarding separation distance between high-voltage transmission lines to be a minimum of 250 feet. The alternative routes and route variations for the Project were analyzed in the Draft EIS assuming a greater separation distance of 1,500 feet, based on earlier 2008 WECC guidance. Considering the revised WECC guidance, in early 2014, the BLM asked the Applicant to adjust the transmission line alignment along the Agency Preferred Alternative to be approximately 250 feet from existing linear facilities and 300 feet from other proposed transmission line alignments, where applicable. The BLM's intent is to reduce the amount of potential impacts and avoid potential proliferation of transmission lines across the landscape in accordance with the Federal Land Policy and Management Act of 1976. The alternative routes and route variations for the Project are analyzed in the Final EIS assuming a separation distance of 250 to 300 feet from the TransWest Express transmission project.

Comment(s)

Response(s)

C6 **Moffat County Commissioners (cont.)**



C6c

corridor through Moffat County. We strongly believe the same corridor for all lines should be evaluated in this EIS.

The Trans West Transmission Project corridor and the Gateway South project corridor do not line up exactly in various portions of the Seven Mile Ridge route across Moffat County. The Moffat County Commissioners agree with the proposed corridor of 2 miles in width to provide for future transmission lines. Incongruencies between both proposed 2 mile corridors (TransWest and Gateway South) must be rectified in order to minimize surface disturbance and provide one corridor for any currently proposed transmission lines, as well as future transmission lines.

C6d

Moffat County requests BLM identify the transmission line corridor as a one-time allocation, and commit that foreseeable future lines will stay within the 2 mile corridor. BLM must also commit that width expansions (beyond 2 miles) of the corridor to accommodate other needs is not anticipated in the foreseeable future. Of particular concern is the ability for additional power lines within the proposed corridor to be kept in the corridor, and that there is room within the corridor for these expansions. BLM has not assured this because TransWest and Gateway South have deviated routes from each other.

C6e

Disturbance Caps: The DEIS does not mention the effect on sage grouse habitat disturbance caps (probable in the Sage Grouse EIS) that the corridor will create. Although Moffat County is aware there has been discussions of not counting the power line corridor against the surface disturbance cap of sage grouse habitat, Moffat County strongly opposes this concept as it pedestals one land use above others by giving power lines a 'free pass' regarding sage grouse. Moffat County requests full discussion and impact analysis occur regarding impacts of the Gateway South EIS on sage grouse disturbance caps proposed in the BLM Sage Grouse EIS. It is plausible that BLM may take the position that since disturbance caps are not yet adopted because the Sage Grouse EIS is still in draft form, that BLM cannot analyze impacts. This would be a short-sighted position since it is known that the disturbance cap concept is in BLM's preferred alternative and will very likely be implemented.

C6f

Sage Grouse Habitat Credit Exchange System / Valuation of Easements : The Habitat Credit Exchange system is not addressed in the EIS, yet should be studied and recognized as being a tool for additional compensation for landowners whose credit selling ability would be impacted by the power line corridor, as well as acknowledgment that the Habitat Credit Exchange Program offers a mechanism for power line corridors to be established. The Socio Economic Section would be an appropriate spot for this discussion. Impact analysis sections should consider the impacts to the agriculture and industry sectors that are likely to utilize this program to buy/sell sage grouse habitat credits on the open market. Moffat County requests that a description occur, centered around power line impacts of Sage Grouse Habitat Exchanges. Again BLM may consider the credit exchange program premature for EIS consideration, but considering the dramatic impacts on BLM's analysis, Moffat County requests its consideration in the Gateway South EIS.

C6g

Greater Sage Grouse / Local Conservation Plans / Habitat Equivalency Analysis: The Moffat County Commission generally supports the concepts of Habitat Equivalency Analysis, which are very similar to compensatory mitigation philosophies, however broad reaching

221 West Victory Way, Ste 130
Craig, CO 81625
(970) 824-5517
(970) 824-9191 (fax)

John S. Kinkaid
District 1

Charles G. Grobe
District 2

Thomas J. Mathers
District 3

C6d

The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations. No utility corridor modification or designation on BLM-administered lands is proposed as part of this Project along the agency-preferred alternative in Moffat County. See response to Comment C6c.

C6e

The BLM is not required to evaluate potential restrictions contained in the alternatives considered in the federal sage-grouse mananagement planning process in the EIS for the Project. The analysis contained in the Final EIS for the Project is based on BLM and other cooperating agency policies and plans pertaining to sage-grouse management that are in effect at the time the analysis was prepared. If an action alternative is selected, the BLM's decision on the Project would comply with all relevant sage-grouse stipulations in applicable BLM RMPs at the time the decision is issued.

C6f

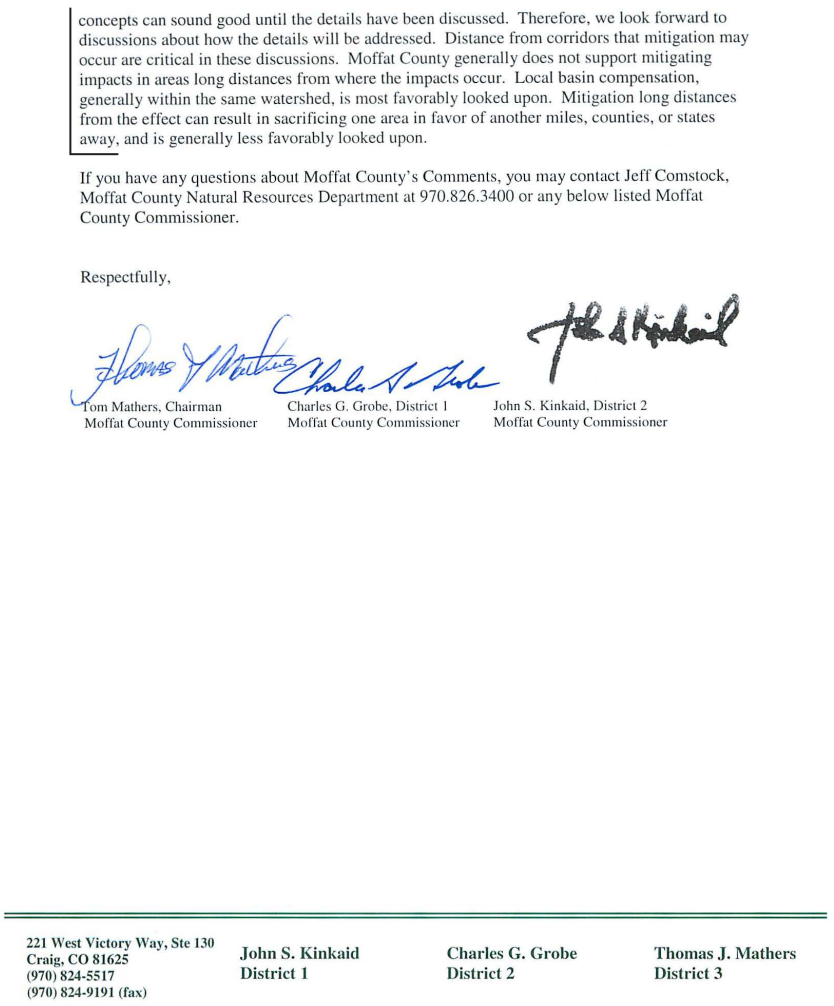
BLM is aware of the ongoing development of the Colorado Sage-grouse Habitat Credit Exchange Program. However, the exchange is not fully operational at this time and analysis of potential effects of the Project on the value of potential conservation actions undertaken by private landowners is beyond the scope of BLM's EIS. As described in Appendix K of the EIS, the Applicant is preparing a voluntary sage-grouse mitigation plan to compensate for potential effects on sage-grouse and meet current management objectives. Implementation of the mitigation plan is expected to result in funding and implementation of actions that improve sage-grouse habitats. BLM, the Applicant, and the agencies participating in the preparation of the sage-grouse mitigation plan have established an objective of implementing conservation actions as close as reasonably possible to the effect being mitigated. Therefore, BLM anticipates that the Project may further incentivize and provide financial support for sage-grouse conservation in areas crossed by the Project.

C6g

Comments noted. The BLM understands Moffat County is participating in the Habitat Equivalency Analysis (HEA)] Technical Working Group) that includes sage-grouse biologists from the BLM, U.S. Fish and Wildlife Service, state wildlife agencies, and other cooperating agencies. The Technical Working group was convened by the Applicant to provide input and guidance for developing the Applicant's HEA. The HEA that will be used is a replicable method for determining project-related permanent and interim habitat losses. The HEA will be used to quantify impacts on sage-grouse and mitigation needed to meet management standards.

In accordance with agency policies pertaining to offsite mitigation, the BLM, cooperating agencies, and Applicant are working collaboratively to develop appropriate offsite mitigation that could be implemented to facilitate reasonable development of the Project consistent with applicable agency plans and policies pertaining to sage-grouse.

C6 **Moffat County Commissioners (cont.)**



C6g concepts can sound good until the details have been discussed. Therefore, we look forward to discussions about how the details will be addressed. Distance from corridors that mitigation may occur are critical in these discussions. Moffat County generally does not support mitigating impacts in areas long distances from where the impacts occur. Local basin compensation, generally within the same watershed, is most favorably looked upon. Mitigation long distances from the effect can result in sacrificing one area in favor of another miles, counties, or states away, and is generally less favorably looked upon.

If you have any questions about Moffat County's Comments, you may contact Jeff Comstock, Moffat County Natural Resources Department at 970.826.3400 or any below listed Moffat County Commissioner.

Respectfully,

Tom Mathers, Chairman
Moffat County Commissioner

Charles G. Grobe, District 1
Moffat County Commissioner

John S. Kinkaid, District 2
Moffat County Commissioner

221 West Victory Way, Ste 130
Craig, CO 81625
(970) 824-5517
(970) 824-9191 (fax)

John S. Kinkaid
District 1

Charles G. Grobe
District 2

Thomas J. Mathers
District 3

Comment(s)

C7 **Sanpete County Economic Development**

On Mon, Feb 24, 2014 at 2:33 PM, Kevin Christensen <kevin@sanpete.com> wrote:

I support Rocky Mt. Powers Gateway South project. My comment is regarding the location of the transmission line in Salt Creek Canyon, east of Nephi, Utah.

C7a Highway 132 in this canyon is the primary access to Sanpete Valley; which already has 2 transmission lines. The Gateway South project will be number 3. There are also 2 other proposed transmission lines for the canyon: TransWest http://www.transwestexpress.net/ and Zephyr http://www.datcllc.com/datc-projects/zephyr/

I am concerned about the visual/ scenic impact these lines will have on the canyon, as well as the entrance to our County.

Kevin Christensen

Sanpete County

Economic Development

435-835-4321

www.Sanpete.com

Response(s)

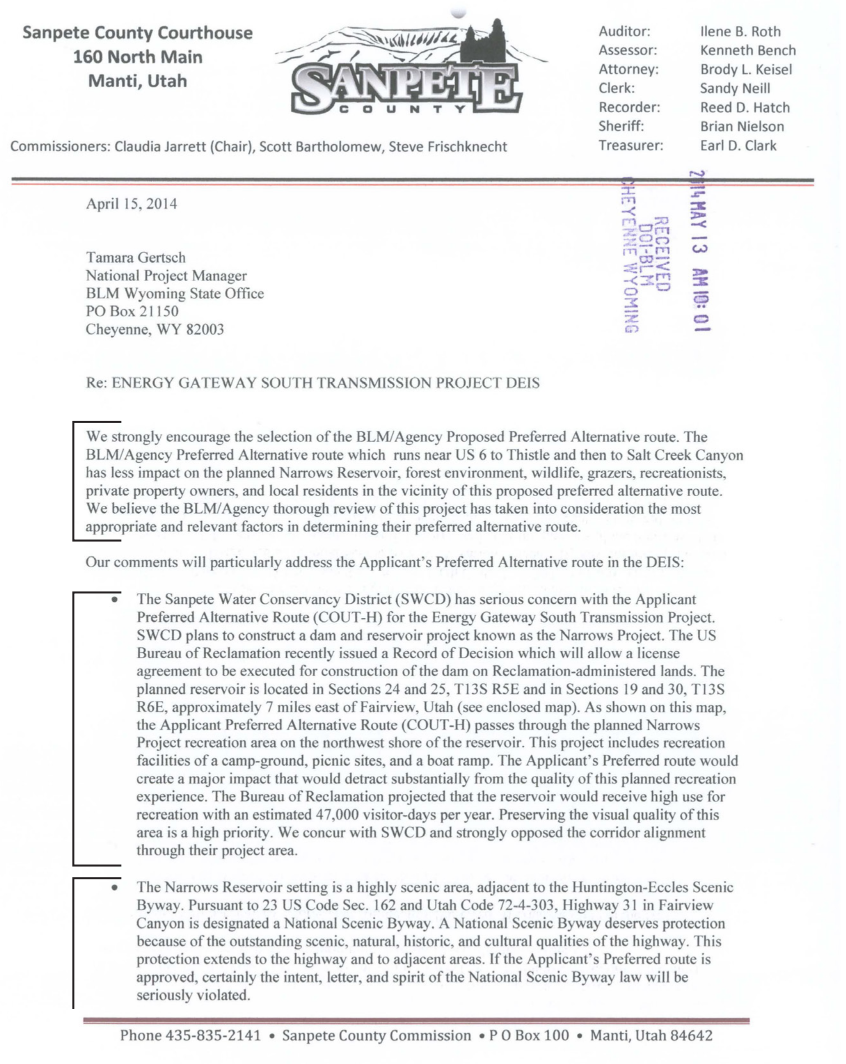
C7a One of the criteria developed to site alternative routes for the proposed transmission line (2007 to 2008) was, and remains, to parallel existing linear facilities. As noted in the comment, the proposed transmission line follows the path of existing transmission lines—the Mona-to-Huntington 345-kilovolt (kV), Jerusalem-to-Nebo 138kV, and Mona-to-Bonanza 345kV transmission lines, thereby adhering to the criterion disclosed to the public during scoping and agreed-upon by the lead and cooperating agencies. Further limiting the location of the transmission line(s) are the surrounding rugged terrain and administrative-management constraints of surrounding jurisdictions; making the route through Salt Creek Canyon and along Highway 132 the only viable east-west route into central Utah (to the Clover Substation) without having to change the course of the transmission line excessively.

At the request of the BLM, between the Energy Gateway South Transmission Project Draft EIS and Final EIS, the applicants of the Energy Gateway South and TransWest Express transmission project refined their respective alignments along the Agency Preferred Alternative route to reduce the separation between the two proposed transmission lines to be approximately 250 feet from existing linear facilities and approximately 300 feet from one another (refer to Section 2.5.1.3 of the Final EIS). The two lines were colocated where possible to reduce the degree of effects (and reduce the width of the area viewed as a utility corridor) and avoid proliferation of lines across the landscape; however, and particularly in the Salt Creek Canyon area, the lines were sited with consideration of existing and planned land uses and other resource concerns. The Applicant has contacted or will be contacting landowners potentially affected by the Project for rights-of-entry, which is an opportunity for the landowner to discuss adjusting the placement of the transmission line on the landowner's property.

Comment(s)

Response(s)

C8 **Sanpete County Commissioners**



Sanpete County Courthouse
160 North Main
Manti, Utah

SANPETE COUNTY

Commissioners: Claudia Jarrett (Chair), Scott Bartholomew, Steve Frischknecht

Auditor:	Ilene B. Roth
Assessor:	Kenneth Bench
Attorney:	Brody L. Keisel
Clerk:	Sandy Neill
Recorder:	Reed D. Hatch
Sheriff:	Brian Nielson
Treasurer:	Earl D. Clark

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

April 15, 2014

Tamara Gertsch
National Project Manager
BLM Wyoming State Office
PO Box 21150
Cheyenne, WY 82003

Re: ENERGY GATEWAY SOUTH TRANSMISSION PROJECT DEIS

C8a We strongly encourage the selection of the BLM/Agency Proposed Preferred Alternative route. The BLM/Agency Preferred Alternative route which runs near US 6 to Thistle and then to Salt Creek Canyon has less impact on the planned Narrows Reservoir, forest environment, wildlife, grazers, recreationists, private property owners, and local residents in the vicinity of this proposed preferred alternative route. We believe the BLM/Agency thorough review of this project has taken into consideration the most appropriate and relevant factors in determining their preferred alternative route.

Our comments will particularly address the Applicant's Preferred Alternative route in the DEIS:

C8b
- The Sanpete Water Conservancy District (SWCD) has serious concern with the Applicant Preferred Alternative Route (COUT-H) for the Energy Gateway South Transmission Project. SWCD plans to construct a dam and reservoir project known as the Narrows Project. The US Bureau of Reclamation recently issued a Record of Decision which will allow a license agreement to be executed for construction of the dam on Reclamation-administered lands. The planned reservoir is located in Sections 24 and 25, T13S R5E and in Sections 19 and 30, T13S R6E, approximately 7 miles east of Fairview, Utah (see enclosed map). As shown on this map, the Applicant Preferred Alternative Route (COUT-H) passes through the planned Narrows Project recreation area on the northwest shore of the reservoir. This project includes recreation facilities of a camp-ground, picnic sites, and a boat ramp. The Applicant's Preferred route would create a major impact that would detract substantially from the quality of this planned recreation experience. The Bureau of Reclamation projected that the reservoir would receive high use for recreation with an estimated 47,000 visitor-days per year. Preserving the visual quality of this area is a high priority. We concur with SWCD and strongly opposed the corridor alignment through their project area.

C8c
- The Narrows Reservoir setting is a highly scenic area, adjacent to the Huntington-Eccles Scenic Byway. Pursuant to 23 US Code Sec. 162 and Utah Code 72-4-303, Highway 31 in Fairview Canyon is designated a National Scenic Byway. A National Scenic Byway deserves protection because of the outstanding scenic, natural, historic, and cultural qualities of the highway. This protection extends to the highway and to adjacent areas. If the Applicant's Preferred route is approved, certainly the intent, letter, and spirit of the National Scenic Byway law will be seriously violated.

Phone 435-835-2141 • Sanpete County Commission • P O Box 100 • Manti, Utah 84642

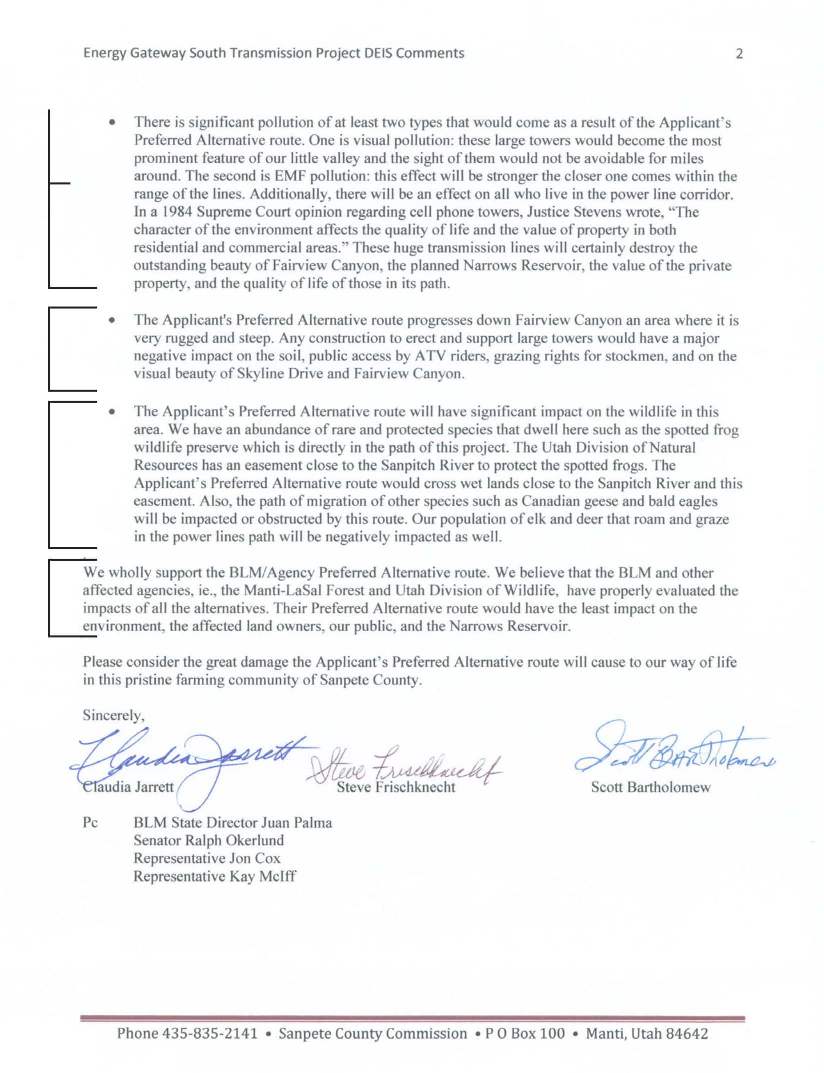
C8a Comment and route preference noted.

C8b The Narrows Project is considered a past/present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11. Also, the Narrows Project recreation area is discussed in Section 3.2.12.

C8c Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

C8 | **Sanpete County Commissioners (cont.)**



C8c

- There is significant pollution of at least two types that would come as a result of the Applicant's Preferred Alternative route. One is visual pollution: these large towers would become the most prominent feature of our little valley and the sight of them would not be avoidable for miles around.

C8d

The second is EMF pollution: this effect will be stronger the closer one comes within the range of the lines. Additionally, there will be an effect on all who live in the power line corridor. In a 1984 Supreme Court opinion regarding cell phone towers, Justice Stevens wrote, "The character of the environment affects the quality of life and the value of property in both residential and commercial areas." These huge transmission lines will certainly destroy the outstanding beauty of Fairview Canyon, the planned Narrows Reservoir, the value of the private property, and the quality of life of those in its path.

C8e

- The Applicant's Preferred Alternative route progresses down Fairview Canyon an area where it is very rugged and steep. Any construction to erect and support large towers would have a major negative impact on the soil, public access by ATV riders, grazing rights for stockmen, and on the visual beauty of Skyline Drive and Fairview Canyon.

C8f

- The Applicant's Preferred Alternative route will have significant impact on the wildlife in this area. We have an abundance of rare and protected species that dwell here such as the spotted frog wildlife preserve which is directly in the path of this project. The Utah Division of Natural Resources has an easement close to the Sanpitch River to protect the spotted frogs. The Applicant's Preferred Alternative route would cross wet lands close to the Sanpitch River and this easement. Also, the path of migration of other species such as Canadian geese and bald eagles will be impacted or obstructed by this route. Our population of elk and deer that roam and graze in the power lines path will be negatively impacted as well.

C8g

We wholly support the BLM/Agency Preferred Alternative route. We believe that the BLM and other affected agencies, ie., the Manti-LaSal Forest and Utah Division of Wildlife, have properly evaluated the impacts of all the alternatives. Their Preferred Alternative route would have the least impact on the environment, the affected land owners, our public, and the Narrows Reservoir.

Please consider the great damage the Applicant's Preferred Alternative route will cause to our way of life in this pristine farming community of Sanpete County.

Sincerely,

Claudia Jarrett Steve Frischknecht Scott Bartholomew

Pc BLM State Director Juan Palma
Senator Ralph Okerlund
Representative Jon Cox
Representative Kay McIff

Phone 435-835-2141 • Sanpete County Commission • P O Box 100 • Manti, Utah 84642

Response(s)

C8d See responses to Comments C8b and C8c. The Applicant is aware of concerns regarding possible health risks from electromagnetic fields (EMF); however no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action for environmental protection (specifically, Design Feature 11; refer to Table 2-8), the Applicant will continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the World Health Organization and the International Commission for Non-Ionizing Radiation Protection, for guidance and guidelines regarding EMF. The potential effects of EMF are discussed in greater detail in Section 3.2.23. Potential impacts to visual resources and scenery are discussed in Section 3.2.18. Socioeconomic conditions are discussed in Section 3.2.22.

C8e See response to C8c.

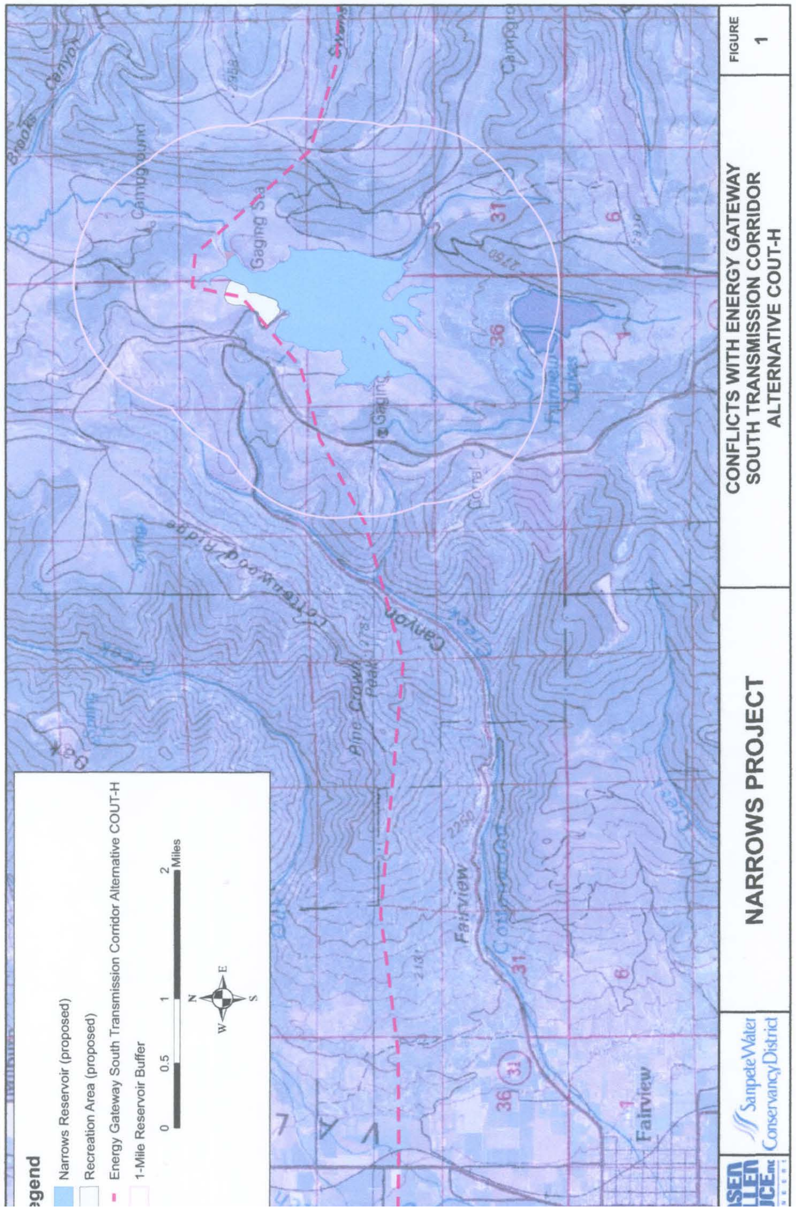
C8f The two conservation easements located near the Sanpitch River (the Nuttall Farms and Crawford Farms conservation easements) have been incorporated into the Final EIS (refer to Section 3.2.15). Potential impacts on the biological resources that may occur in these conservation easements are discussed in Sections 3.2.7 and 3.2.8.

C8g Comment and route preference noted.

Comment(s)

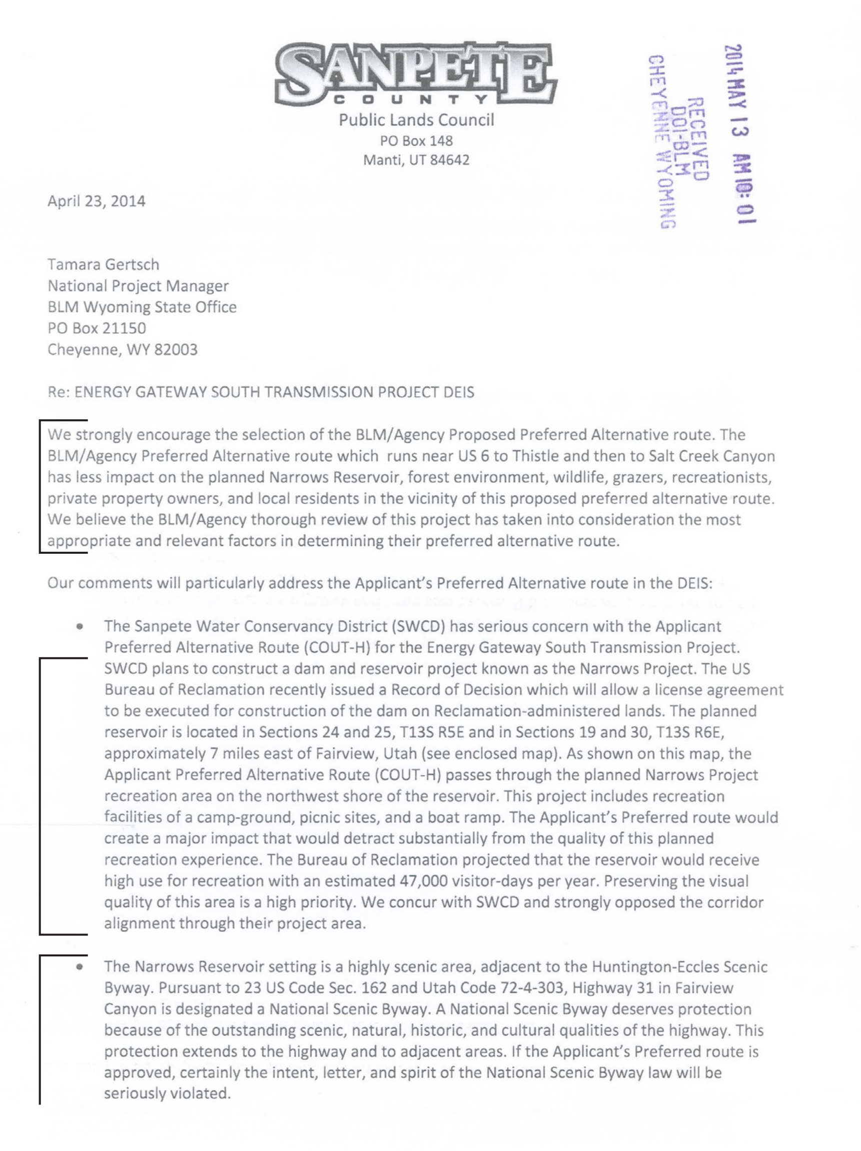
Response(s)

C8	Sanpete County Commissioners (cont.)


CONFLICTS WITH ENERGY GATEWAY SOUTH TRANSMISSION CORRIDOR ALTERNATIVE COUT-H
FIGURE 1
NARROWS PROJECT
Sanpete Water Conservancy District
egend
Narrows Reservoir (proposed)
Recreation Area (proposed)
Energy Gateway South Transmission Corridor Alternative COUT-H
1-Mile Reservoir Buffer
0
0.5
1
2
Miles
N
E
S
W
Gooseberry Narrows
Gaging Sta
Campground
Cottonwood Ridge
Canyon
Pine Crown Peak
Fairview
Fairview Lakes
Corral
Swamp
Brooks Canyon
31
36
6
1

Comment(s)

C9 **Sanpete County Public Lands Council**



SANPETE
COUNTY
Public Lands Council
PO Box 148
Manti, UT 84642

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

April 23, 2014

Tamara Gertsch
National Project Manager
BLM Wyoming State Office
PO Box 21150
Cheyenne, WY 82003

Re: ENERGY GATEWAY SOUTH TRANSMISSION PROJECT DEIS

C9a We strongly encourage the selection of the BLM/Agency Proposed Preferred Alternative route. The BLM/Agency Preferred Alternative route which runs near US 6 to Thistle and then to Salt Creek Canyon has less impact on the planned Narrows Reservoir, forest environment, wildlife, grazers, recreationists, private property owners, and local residents in the vicinity of this proposed preferred alternative route. We believe the BLM/Agency thorough review of this project has taken into consideration the most appropriate and relevant factors in determining their preferred alternative route.

Our comments will particularly address the Applicant's Preferred Alternative route in the DEIS:

- The Sanpete Water Conservancy District (SWCD) has serious concern with the Applicant Preferred Alternative Route (COUT-H) for the Energy Gateway South Transmission Project. C9b SWCD plans to construct a dam and reservoir project known as the Narrows Project. The US Bureau of Reclamation recently issued a Record of Decision which will allow a license agreement to be executed for construction of the dam on Reclamation-administered lands. The planned reservoir is located in Sections 24 and 25, T13S R5E and in Sections 19 and 30, T13S R6E, approximately 7 miles east of Fairview, Utah (see enclosed map). As shown on this map, the Applicant Preferred Alternative Route (COUT-H) passes through the planned Narrows Project recreation area on the northwest shore of the reservoir. This project includes recreation facilities of a camp-ground, picnic sites, and a boat ramp. The Applicant's Preferred route would create a major impact that would detract substantially from the quality of this planned recreation experience. The Bureau of Reclamation projected that the reservoir would receive high use for recreation with an estimated 47,000 visitor-days per year. Preserving the visual quality of this area is a high priority. We concur with SWCD and strongly opposed the corridor alignment through their project area.

- C9c The Narrows Reservoir setting is a highly scenic area, adjacent to the Huntington-Eccles Scenic Byway. Pursuant to 23 US Code Sec. 162 and Utah Code 72-4-303, Highway 31 in Fairview Canyon is designated a National Scenic Byway. A National Scenic Byway deserves protection because of the outstanding scenic, natural, historic, and cultural qualities of the highway. This protection extends to the highway and to adjacent areas. If the Applicant's Preferred route is approved, certainly the intent, letter, and spirit of the National Scenic Byway law will be seriously violated.

Response(s)

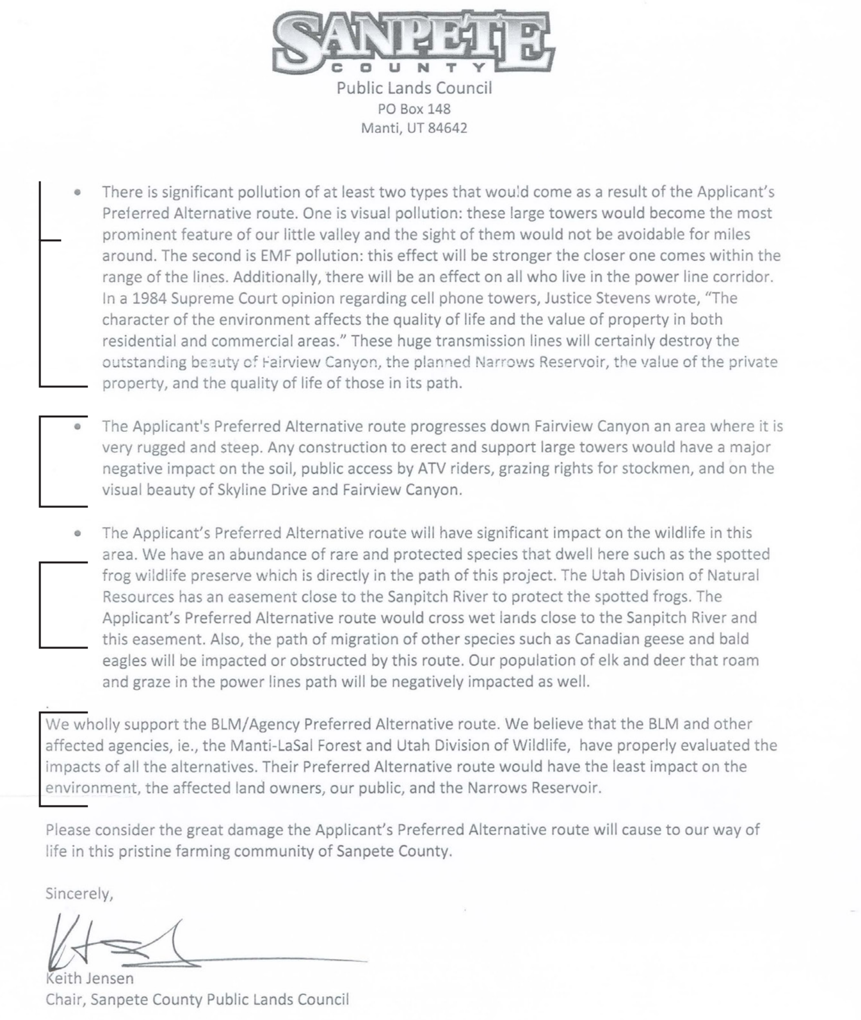
C9a Comment and route preference noted.

C9b The Narrows Project is considered a past/present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11. Also, the Narrows Project recreation area is discussed in Section 3.2.12.

C9c Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

C9 **Sanpete County Public Lands Council (cont.)**



SANPETE
COUNTY
Public Lands Council
PO Box 148
Manti, UT 84642

C9c

C9d

- There is significant pollution of at least two types that would come as a result of the Applicant's Preferred Alternative route. One is visual pollution: these large towers would become the most prominent feature of our little valley and the sight of them would not be avoidable for miles around. The second is EMF pollution: this effect will be stronger the closer one comes within the range of the lines. Additionally, there will be an effect on all who live in the power line corridor. In a 1984 Supreme Court opinion regarding cell phone towers, Justice Stevens wrote, "The character of the environment affects the quality of life and the value of property in both residential and commercial areas." These huge transmission lines will certainly destroy the outstanding beauty of Fairview Canyon, the planned Narrows Reservoir, the value of the private property, and the quality of life of those in its path.

C9e

- The Applicant's Preferred Alternative route progresses down Fairview Canyon an area where it is very rugged and steep. Any construction to erect and support large towers would have a major negative impact on the soil, public access by ATV riders, grazing rights for stockmen, and on the visual beauty of Skyline Drive and Fairview Canyon.

C9f

- The Applicant's Preferred Alternative route will have significant impact on the wildlife in this area. We have an abundance of rare and protected species that dwell here such as the spotted frog wildlife preserve which is directly in the path of this project. The Utah Division of Natural Resources has an easement close to the Sanpitch River to protect the spotted frogs. The Applicant's Preferred Alternative route would cross wet lands close to the Sanpitch River and this easement. Also, the path of migration of other species such as Canadian geese and bald eagles will be impacted or obstructed by this route. Our population of elk and deer that roam and graze in the power lines path will be negatively impacted as well.

C9g

We wholly support the BLM/Agency Preferred Alternative route. We believe that the BLM and other affected agencies, ie., the Manti-LaSal Forest and Utah Division of Wildlife, have properly evaluated the impacts of all the alternatives. Their Preferred Alternative route would have the least impact on the environment, the affected land owners, our public, and the Narrows Reservoir.

Please consider the great damage the Applicant's Preferred Alternative route will cause to our way of life in this pristine farming community of Sanpete County.

Sincerely,

Keith Jensen
Chair, Sanpete County Public Lands Council

Response(s)

C9d

The Applicant is aware of concerns regarding possible health risks from EMF; however no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action for environmental protection (specifically, Design Feature 11; refer to Table 2-8), the Applicant will continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the World Health Organization and the International Commission for Non-Ionizing Radiation Protection, for guidance and guidelines regarding EMF. The potential effects of EMF are discussed in greater detail in Section 3.2.23.

Potential impacts to visual resources and scenery are discussed in Section 3.2.18 and socioeconomic conditions are discussed in Section 3.2.22.

C9e

Comment and route preference noted. See responses to Comments C9b through C9d.

C9f

Additional information regarding conservation agreements for Columbia spotted frog have been incorporated into Section 3.2.10.4 and Appendix J of the Final EIS. Preconstruction surveys would be conducted for sensitive species to identify locations where relevant selective mitigation measures and design features would be applied.

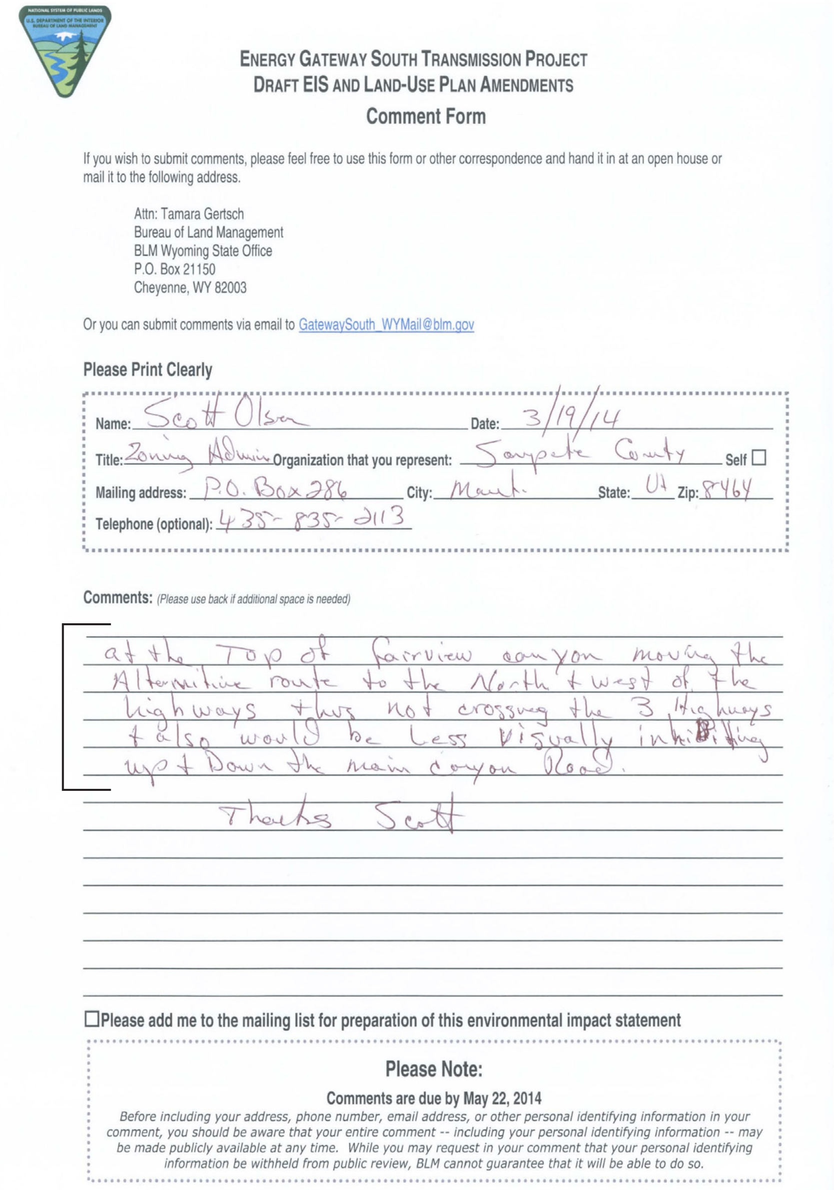
Impacts on migratory birds are discussed in Section 3.2.9 and would also be reduced through the application of relevant design features and selective mitigation measures.

C9g

Comment and route preference noted.

Comment(s)

C10 **Sanpete County Zoning Administration**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Scott Olsen Date: 3/19/14
Title: Zoning Admin Organization that you represent: Sanpete County Self ☐
Mailing address: P.O. Box 286 City: Manti State: Ut Zip: 8464
Telephone (optional): 435-835-2113

Comments: *(Please use back if additional space is needed)*

C10a at the Top of fairview canyon moving the Alternitive route to the North & west of the highways thus not crossing the 3 Highways & also would be Less visually inhibiting up & Down the main canyon Road.

Thanks Scott

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

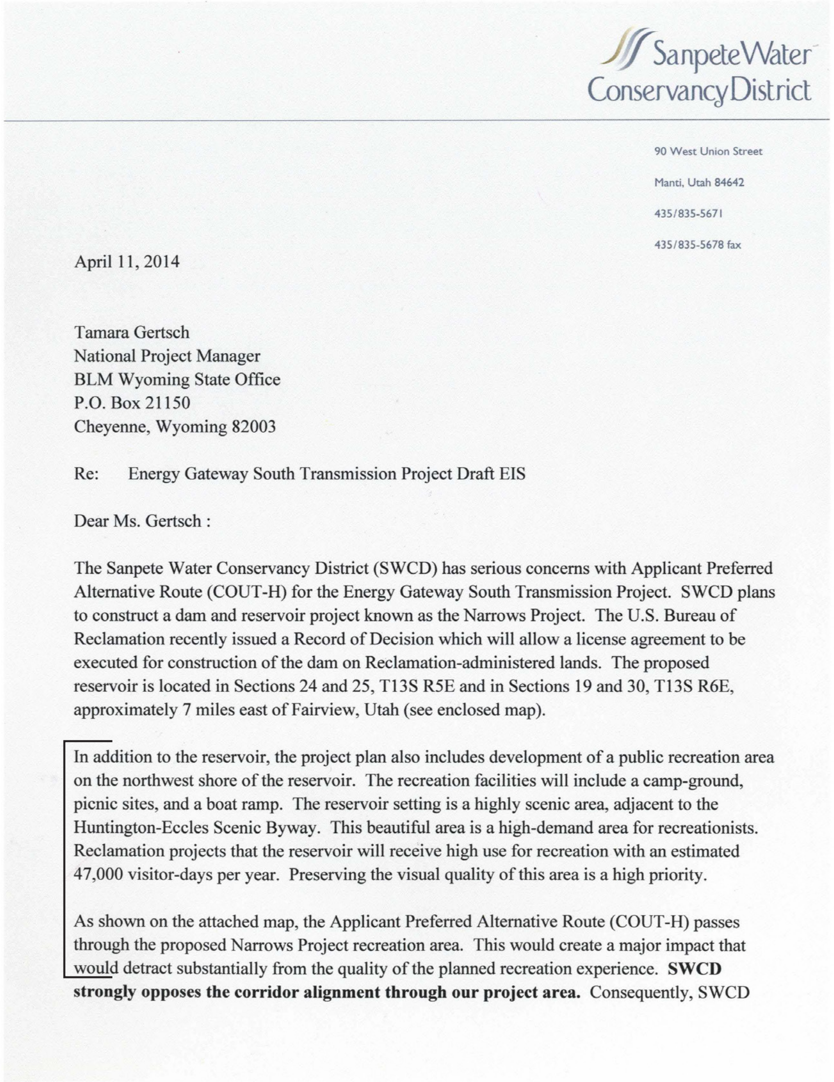
Response(s)

C10a The effect on views resulting from the Project at each of these three highways crossings were documented using visual contrast rating worksheets (refer to in Appendix M; KOPs #260, #283, and #284). Please note two of these three KOP locations have visual simulations developed showing the impact on views (also in Appendix M).

Locating the transmission line farther to the north and west of these highway crossings would increase impacts on the Skyline Drive Scenic Backway (including the kiosk and parking area) and the Oak Creek Inventoried Roadless Area (IRA). Due to steep slopes on the north side of Fairview Canyon, the transmission line would need to be sited on Cottonwood Ridge, which would introduce views of skylined transmission structures on views from both the highway as well as those from the IRA. Locating the transmission line even farther to the north, to screen views from the highway, would further impact the roadless attributes and wilderness characteristics in the IRA.

Comment(s)

C11 **Sanpete Water Conservancy District**



SanpeteWater
ConservancyDistrict

90 West Union Street
Manti, Utah 84642
435/835-5671
435/835-5678 fax

April 11, 2014

Tamara Gertsch
National Project Manager
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, Wyoming 82003

Re: Energy Gateway South Transmission Project Draft EIS

Dear Ms. Gertsch :

The Sanpete Water Conservancy District (SWCD) has serious concerns with Applicant Preferred Alternative Route (COUT-H) for the Energy Gateway South Transmission Project. SWCD plans to construct a dam and reservoir project known as the Narrows Project. The U.S. Bureau of Reclamation recently issued a Record of Decision which will allow a license agreement to be executed for construction of the dam on Reclamation-administered lands. The proposed reservoir is located in Sections 24 and 25, T13S R5E and in Sections 19 and 30, T13S R6E, approximately 7 miles east of Fairview, Utah (see enclosed map).

C11a

In addition to the reservoir, the project plan also includes development of a public recreation area on the northwest shore of the reservoir. The recreation facilities will include a camp-ground, picnic sites, and a boat ramp. The reservoir setting is a highly scenic area, adjacent to the Huntington-Eccles Scenic Byway. This beautiful area is a high-demand area for recreationists. Reclamation projects that the reservoir will receive high use for recreation with an estimated 47,000 visitor-days per year. Preserving the visual quality of this area is a high priority.

As shown on the attached map, the Applicant Preferred Alternative Route (COUT-H) passes through the proposed Narrows Project recreation area. This would create a major impact that would detract substantially from the quality of the planned recreation experience. **SWCD strongly opposes the corridor alignment through our project area.** Consequently, SWCD

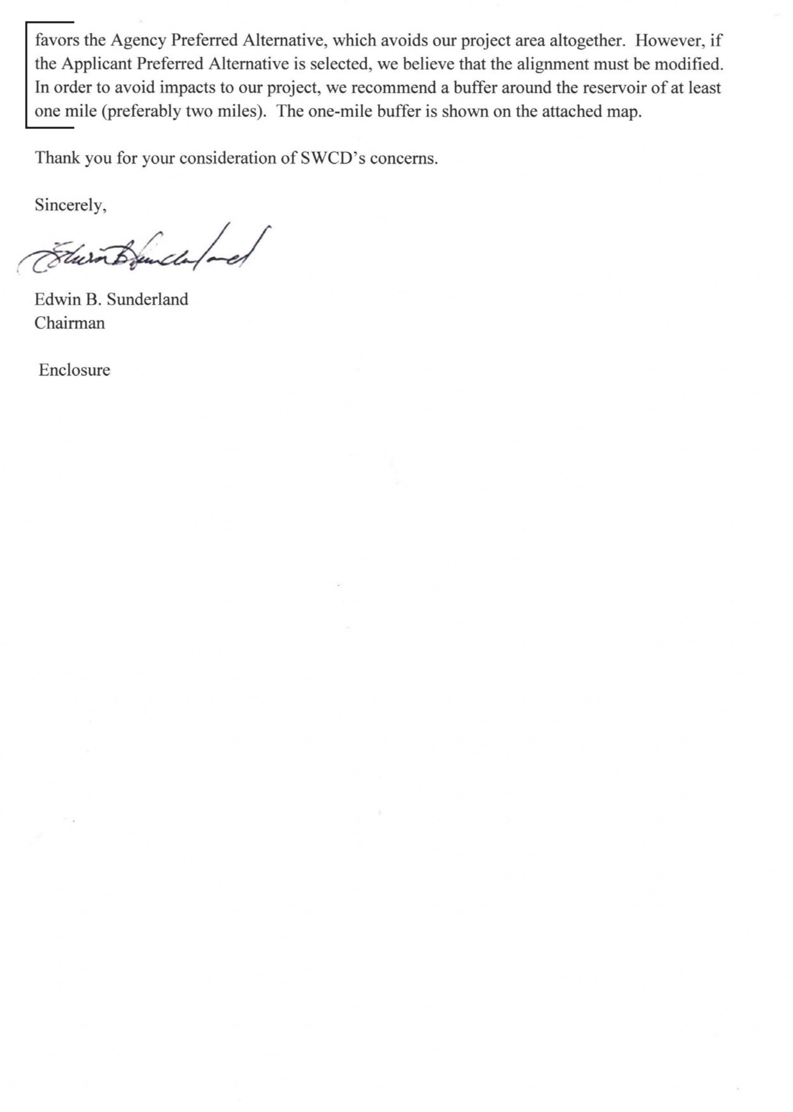
Response(s)

C11a

The Narrows Project is considered a past/present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11. Also, the Narrows Project recreation area is discussed in Section 3.2.12.

Comment(s)

C11 **Sanpete Water Conservancy District (cont.)**



C11b favors the Agency Preferred Alternative, which avoids our project area altogether. However, if the Applicant Preferred Alternative is selected, we believe that the alignment must be modified. In order to avoid impacts to our project, we recommend a buffer around the reservoir of at least one mile (preferably two miles). The one-mile buffer is shown on the attached map.

Thank you for your consideration of SWCD's concerns.

Sincerely,

Edwin B. Sunderland
Chairman

Enclosure

Response(s)

C11b Comment and route preference noted.

Comment(s)	Response(s)
C11 Sanpete Water Conservancy District (cont.)	

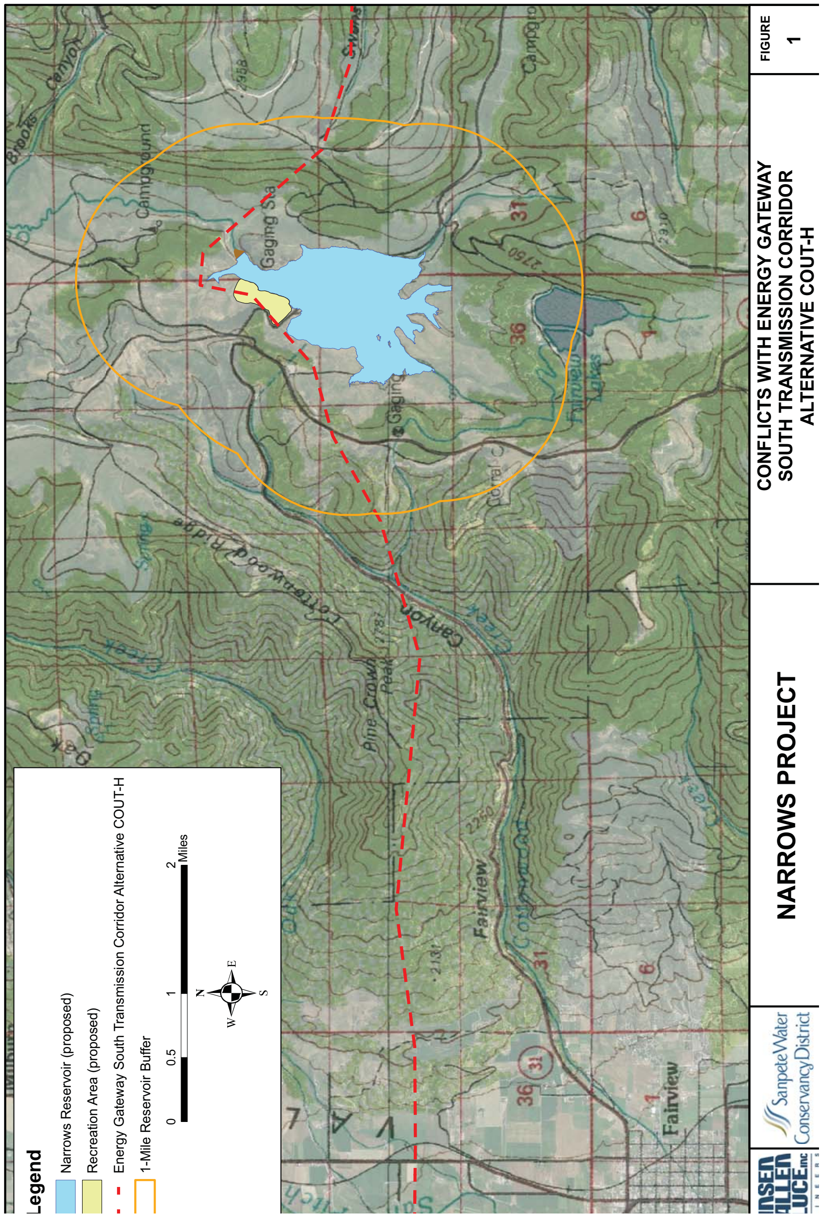
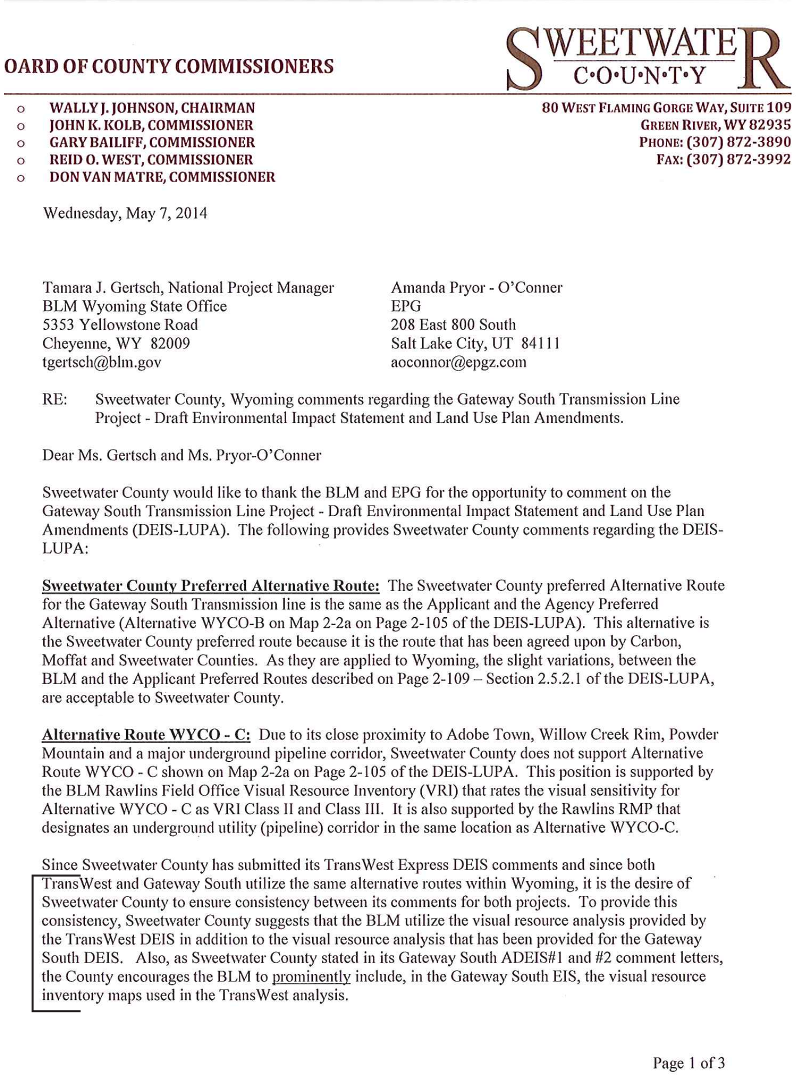


FIGURE 1
CONFLICTS WITH ENERGY GATEWAY SOUTH TRANSMISSION CORRIDOR ALTERNATIVE COUT-H
NARROWS PROJECT
Sanpete Water Conservancy District
Legend
Narrows Reservoir (proposed)
Recreation Area (proposed)
Energy Gateway South Transmission Corridor Alternative COUT-H
1-Mile Reservoir Buffer
0
0.5
1
2
Miles
N
E
S
W
Campground
Gaging Sta
Cottonwood Ridge
Canyon
Pine Crown Peak
Fairview
Creek

Comment(s)

Response(s)

C12 **Sweetwater County Commissioners**



OARD OF COUNTY COMMISSIONERS

SWEETWATER
C·O·U·N·T·Y

- WALLY J. JOHNSON, CHAIRMAN
- JOHN K. KOLB, COMMISSIONER
- GARY BAILIFF, COMMISSIONER
- REID O. WEST, COMMISSIONER
- DON VAN MATRE, COMMISSIONER

80 WEST FLAMING GORGE WAY, SUITE 109
GREEN RIVER, WY 82935
PHONE: (307) 872-3890
FAX: (307) 872-3992

Wednesday, May 7, 2014

Tamara J. Gertsch, National Project Manager
BLM Wyoming State Office
5353 Yellowstone Road
Cheyenne, WY 82009
tgertsch@blm.gov

Amanda Pryor - O'Conner
EPG
208 East 800 South
Salt Lake City, UT 84111
aoconnor@epgz.com

RE: Sweetwater County, Wyoming comments regarding the Gateway South Transmission Line Project - Draft Environmental Impact Statement and Land Use Plan Amendments.

Dear Ms. Gertsch and Ms. Pryor-O'Conner

Sweetwater County would like to thank the BLM and EPG for the opportunity to comment on the Gateway South Transmission Line Project - Draft Environmental Impact Statement and Land Use Plan Amendments (DEIS-LUPA). The following provides Sweetwater County comments regarding the DEIS-LUPA:

Sweetwater County Preferred Alternative Route: The Sweetwater County preferred Alternative Route for the Gateway South Transmission line is the same as the Applicant and the Agency Preferred Alternative (Alternative WYCO-B on Map 2-2a on Page 2-105 of the DEIS-LUPA). This alternative is the Sweetwater County preferred route because it is the route that has been agreed upon by Carbon, Moffat and Sweetwater Counties. As they are applied to Wyoming, the slight variations, between the BLM and the Applicant Preferred Routes described on Page 2-109 – Section 2.5.2.1 of the DEIS-LUPA, are acceptable to Sweetwater County.

Alternative Route WYCO - C: Due to its close proximity to Adobe Town, Willow Creek Rim, Powder Mountain and a major underground pipeline corridor, Sweetwater County does not support Alternative Route WYCO - C shown on Map 2-2a on Page 2-105 of the DEIS-LUPA. This position is supported by the BLM Rawlins Field Office Visual Resource Inventory (VRI) that rates the visual sensitivity for Alternative WYCO - C as VRI Class II and Class III. It is also supported by the Rawlins RMP that designates an underground utility (pipeline) corridor in the same location as Alternative WYCO-C.

C12a Since Sweetwater County has submitted its TransWest Express DEIS comments and since both TransWest and Gateway South utilize the same alternative routes within Wyoming, it is the desire of Sweetwater County to ensure consistency between its comments for both projects. To provide this consistency, Sweetwater County suggests that the BLM utilize the visual resource analysis provided by the TransWest DEIS in addition to the visual resource analysis that has been provided for the Gateway South DEIS. Also, as Sweetwater County stated in its Gateway South ADEIS#1 and #2 comment letters, the County encourages the BLM to prominently include, in the Gateway South EIS, the visual resource inventory maps used in the TransWest analysis.

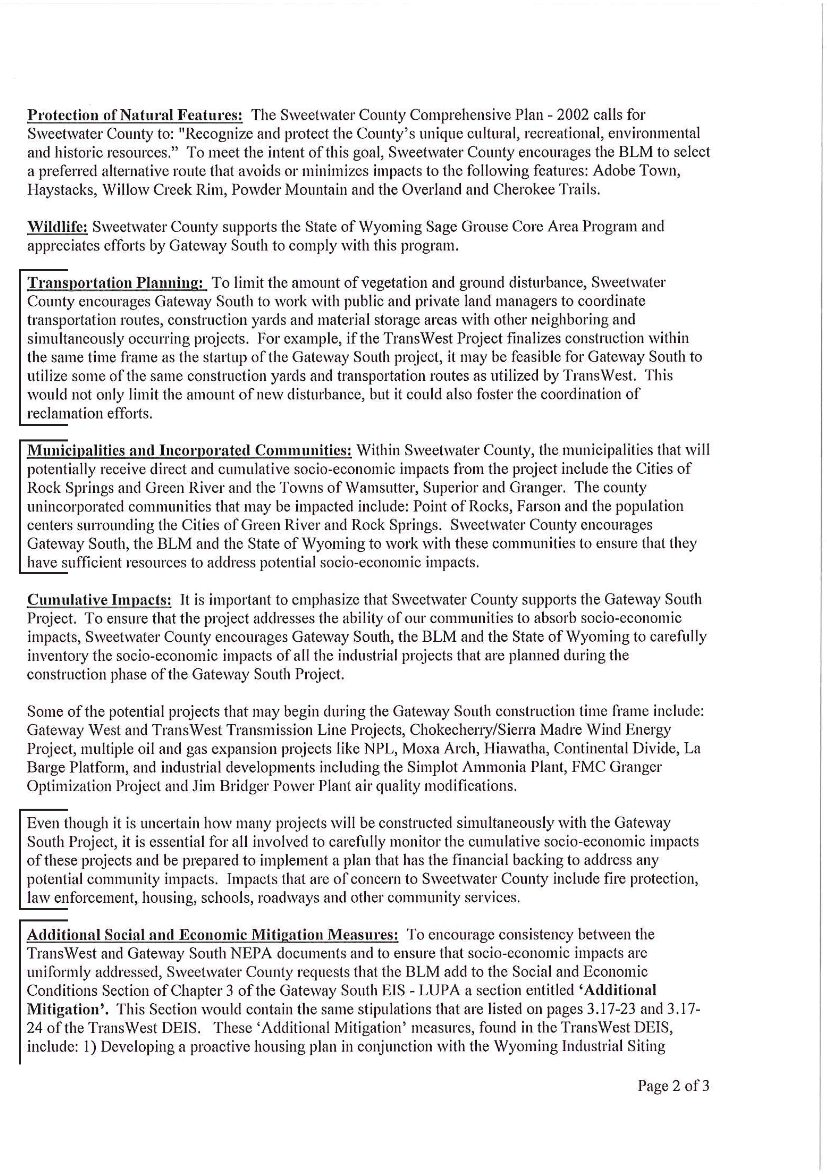
Page 1 of 3

C12a The visual resource analysis conducted for the Project is based on the Project design (i.e., Project description) and issues identified during scoping. Maps depicting the BLM visual resource inventory (e.g., scenic quality rating units, sensitivity level rating units, distance zones, and visual resource inventory classes) are included in Chapter 3 (within the visual resource section) of the Draft EIS and Final EIS, as requested by cooperating agencies, including Sweetwater County, in comments on the first administrative Draft EIS.

Comment(s)

Response(s)

C12 **Sweetwater County Commissioners (cont.)**



Protection of Natural Features: The Sweetwater County Comprehensive Plan - 2002 calls for Sweetwater County to: "Recognize and protect the County's unique cultural, recreational, environmental and historic resources." To meet the intent of this goal, Sweetwater County encourages the BLM to select a preferred alternative route that avoids or minimizes impacts to the following features: Adobe Town, Haystacks, Willow Creek Rim, Powder Mountain and the Overland and Cherokee Trails.

Wildlife: Sweetwater County supports the State of Wyoming Sage Grouse Core Area Program and appreciates efforts by Gateway South to comply with this program.

C12b **Transportation Planning:** To limit the amount of vegetation and ground disturbance, Sweetwater County encourages Gateway South to work with public and private land managers to coordinate transportation routes, construction yards and material storage areas with other neighboring and simultaneously occurring projects. For example, if the TransWest Project finalizes construction within the same time frame as the startup of the Gateway South project, it may be feasible for Gateway South to utilize some of the same construction yards and transportation routes as utilized by TransWest. This would not only limit the amount of new disturbance, but it could also foster the coordination of reclamation efforts.

C12c **Municipalities and Incorporated Communities:** Within Sweetwater County, the municipalities that will potentially receive direct and cumulative socio-economic impacts from the project include the Cities of Rock Springs and Green River and the Towns of Wamsutter, Superior and Granger. The county unincorporated communities that may be impacted include: Point of Rocks, Farson and the population centers surrounding the Cities of Green River and Rock Springs. Sweetwater County encourages Gateway South, the BLM and the State of Wyoming to work with these communities to ensure that they have sufficient resources to address potential socio-economic impacts.

Cumulative Impacts: It is important to emphasize that Sweetwater County supports the Gateway South Project. To ensure that the project addresses the ability of our communities to absorb socio-economic impacts, Sweetwater County encourages Gateway South, the BLM and the State of Wyoming to carefully inventory the socio-economic impacts of all the industrial projects that are planned during the construction phase of the Gateway South Project.

Some of the potential projects that may begin during the Gateway South construction time frame include: Gateway West and TransWest Transmission Line Projects, Chokecherry/Sierra Madre Wind Energy Project, multiple oil and gas expansion projects like NPL, Moxa Arch, Hiawatha, Continental Divide, La Barge Platform, and industrial developments including the Simplot Ammonia Plant, FMC Granger Optimization Project and Jim Bridger Power Plant air quality modifications.

C12d Even though it is uncertain how many projects will be constructed simultaneously with the Gateway South Project, it is essential for all involved to carefully monitor the cumulative socio-economic impacts of these projects and be prepared to implement a plan that has the financial backing to address any potential community impacts. Impacts that are of concern to Sweetwater County include fire protection, law enforcement, housing, schools, roadways and other community services.

C12e **Additional Social and Economic Mitigation Measures:** To encourage consistency between the TransWest and Gateway South NEPA documents and to ensure that socio-economic impacts are uniformly addressed, Sweetwater County requests that the BLM add to the Social and Economic Conditions Section of Chapter 3 of the Gateway South EIS - LUPA a section entitled **'Additional Mitigation'.** This Section would contain the same stipulations that are listed on pages 3.17-23 and 3.17-24 of the TransWest DEIS. These 'Additional Mitigation' measures, found in the TransWest DEIS, include: 1) Developing a proactive housing plan in conjunction with the Wyoming Industrial Siting

Page 2 of 3

C12b Comment forwarded to the Applicant for consideration.

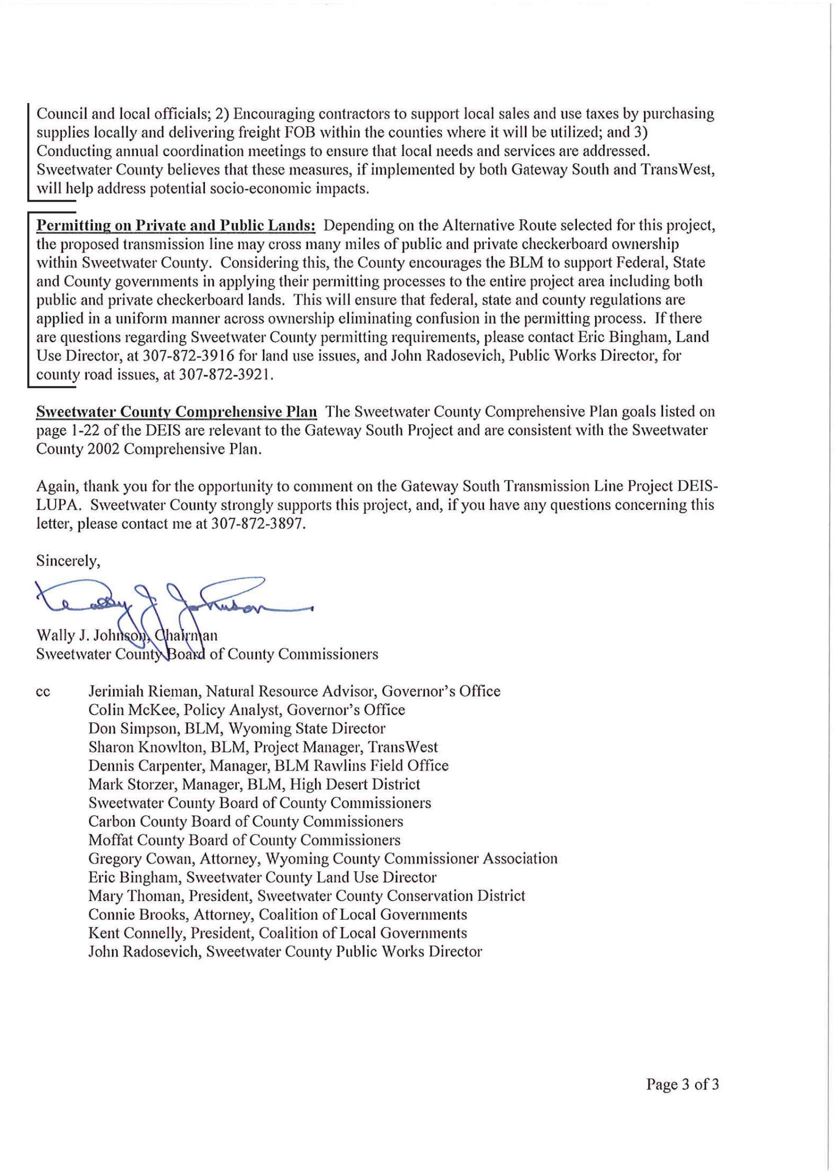
C12c The effects of construction workforce on housing and public services in communities near the transmission line have been added to the analysis in Section 3.2.19.2.

C12d Comment forwarded to the Applicant for consideration.

C12e Comment forwarded to the Applicant for consideration.

Comment(s)

C12 **Sweetwater County Commissioners (cont.)**



Council and local officials; 2) Encouraging contractors to support local sales and use taxes by purchasing supplies locally and delivering freight FOB within the counties where it will be utilized; and 3) Conducting annual coordination meetings to ensure that local needs and services are addressed. Sweetwater County believes that these measures, if implemented by both Gateway South and TransWest, will help address potential socio-economic impacts.

C12f **Permitting on Private and Public Lands:** Depending on the Alternative Route selected for this project, the proposed transmission line may cross many miles of public and private checkerboard ownership within Sweetwater County. Considering this, the County encourages the BLM to support Federal, State and County governments in applying their permitting processes to the entire project area including both public and private checkerboard lands. This will ensure that federal, state and county regulations are applied in a uniform manner across ownership eliminating confusion in the permitting process. If there are questions regarding Sweetwater County permitting requirements, please contact Eric Bingham, Land Use Director, at 307-872-3916 for land use issues, and John Radosevich, Public Works Director, for county road issues, at 307-872-3921.

Sweetwater County Comprehensive Plan The Sweetwater County Comprehensive Plan goals listed on page 1-22 of the DEIS are relevant to the Gateway South Project and are consistent with the Sweetwater County 2002 Comprehensive Plan.

Again, thank you for the opportunity to comment on the Gateway South Transmission Line Project DEIS-LUPA. Sweetwater County strongly supports this project, and, if you have any questions concerning this letter, please contact me at 307-872-3897.

Sincerely,

Wally J. Johnson, Chairman
Sweetwater County Board of County Commissioners

cc
Jerimiah Rieman, Natural Resource Advisor, Governor's Office
Colin McKee, Policy Analyst, Governor's Office
Don Simpson, BLM, Wyoming State Director
Sharon Knowlton, BLM, Project Manager, TransWest
Dennis Carpenter, Manager, BLM Rawlins Field Office
Mark Storzer, Manager, BLM, High Desert District
Sweetwater County Board of County Commissioners
Carbon County Board of County Commissioners
Moffat County Board of County Commissioners
Gregory Cowan, Attorney, Wyoming County Commissioner Association
Eric Bingham, Sweetwater County Land Use Director
Mary Thoman, President, Sweetwater County Conservation District
Connie Brooks, Attorney, Coalition of Local Governments
Kent Connelly, President, Coalition of Local Governments
John Radosevich, Sweetwater County Public Works Director

Page 3 of 3

Response(s)

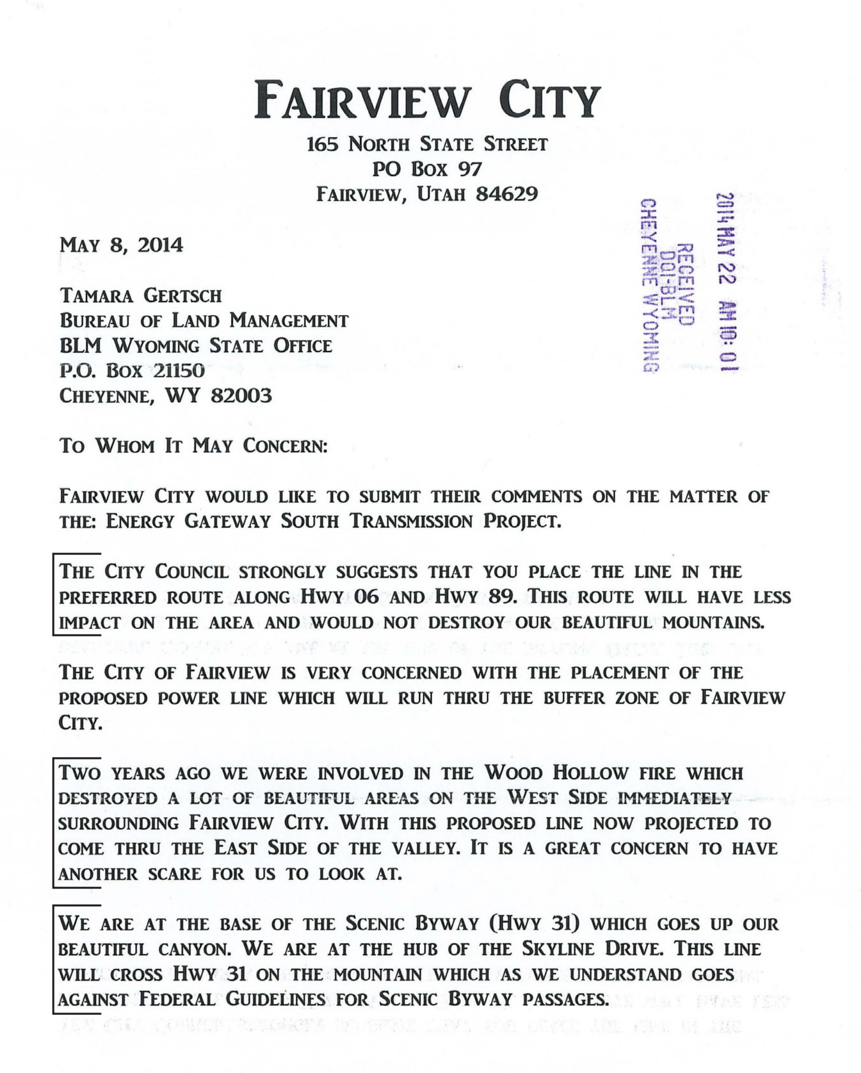
C12f Comment noted.

Exhibit P4
Cities and Towns

Comment(s)

Response(s)

CT1 **Fairview City**



FAIRVIEW CITY
165 NORTH STATE STREET
PO BOX 97
FAIRVIEW, UTAH 84629

2014 MAY 22 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

MAY 8, 2014

TAMARA GERTSCH
BUREAU OF LAND MANAGEMENT
BLM WYOMING STATE OFFICE
P.O. BOX 21150
CHEYENNE, WY 82003

TO WHOM IT MAY CONCERN:

FAIRVIEW CITY WOULD LIKE TO SUBMIT THEIR COMMENTS ON THE MATTER OF THE: ENERGY GATEWAY SOUTH TRANSMISSION PROJECT.

CT1a THE CITY COUNCIL STRONGLY SUGGESTS THAT YOU PLACE THE LINE IN THE PREFERRED ROUTE ALONG HWY 06 AND HWY 89. THIS ROUTE WILL HAVE LESS IMPACT ON THE AREA AND WOULD NOT DESTROY OUR BEAUTIFUL MOUNTAINS.

THE CITY OF FAIRVIEW IS VERY CONCERNED WITH THE PLACEMENT OF THE PROPOSED POWER LINE WHICH WILL RUN THRU THE BUFFER ZONE OF FAIRVIEW CITY.

CT1b TWO YEARS AGO WE WERE INVOLVED IN THE WOOD HOLLOW FIRE WHICH DESTROYED A LOT OF BEAUTIFUL AREAS ON THE WEST SIDE IMMEDIATELY SURROUNDING FAIRVIEW CITY. WITH THIS PROPOSED LINE NOW PROJECTED TO COME THRU THE EAST SIDE OF THE VALLEY. IT IS A GREAT CONCERN TO HAVE ANOTHER SCARE FOR US TO LOOK AT.

CT1c WE ARE AT THE BASE OF THE SCENIC BYWAY (HWY 31) WHICH GOES UP OUR BEAUTIFUL CANYON. WE ARE AT THE HUB OF THE SKYLINE DRIVE. THIS LINE WILL CROSS HWY 31 ON THE MOUNTAIN WHICH AS WE UNDERSTAND GOES AGAINST FEDERAL GUIDELINES FOR SCENIC BYWAY PASSAGES.

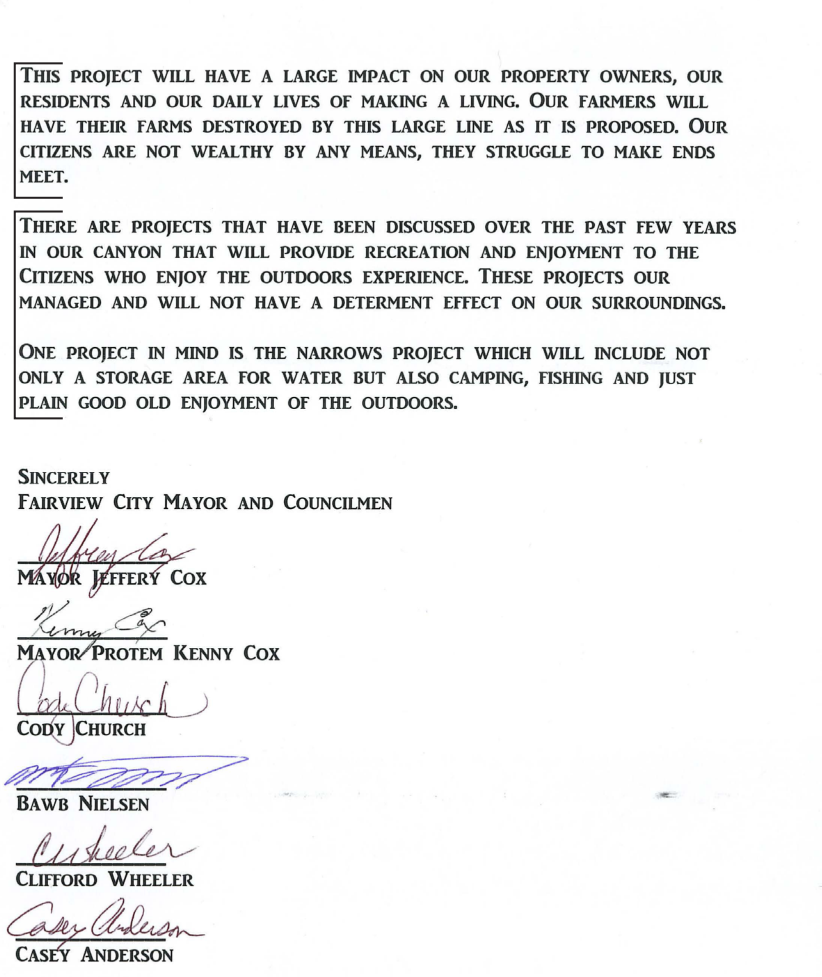
CT1a Comment and route preference noted.

CT1b Comment noted. *[Additional response pending additional input on Project-specific wildland fire management measures to be provided by the U.S. Forest Service.]*

CT1c Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Energy Gateway South Transmission Project (Project) would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

CT1 **Fairview City (cont.)**



CT1d This project will have a large impact on our property owners, our residents and our daily lives of making a living. Our farmers will have their farms destroyed by this large line as it is proposed. Our citizens are not wealthy by any means, they struggle to make ends meet.

CT1e There are projects that have been discussed over the past few years in our canyon that will provide recreation and enjoyment to the Citizens who enjoy the outdoors experience. These projects our managed and will not have a determent effect on our surroundings.

One project in mind is the Narrows project which will include not only a storage area for water but also camping, fishing and just plain good old enjoyment of the outdoors.

Sincerely
Fairview City Mayor and Councilmen

Jeffrey Cox
Mayor Jeffery Cox

Kenny Cox
Mayor Protem Kenny Cox

Cody Church
Cody Church

Bawb Nielsen

CWheeler
Clifford Wheeler

Casey Anderson
Casey Anderson

Response(s)

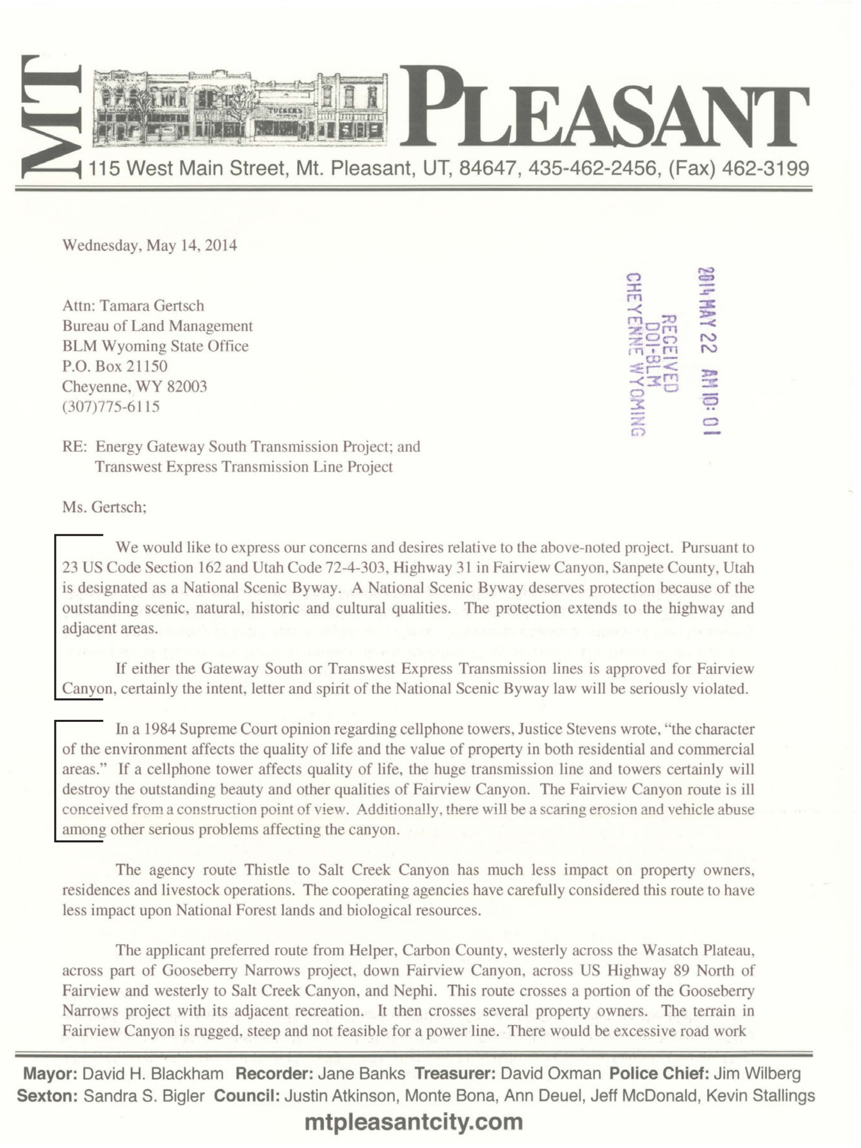
CT1d Comment noted.

CT1e The Narrows Project is considered a past/present project in the cumulative effects analysis in the Final Environmental Impact Statement (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11. Also, the Narrows Project recreation area is discussed in Section 3.2.12.

Comment(s)

Response(s)

CT2 **Mount Pleasant City**



MT PLEASANT
115 West Main Street, Mt. Pleasant, UT, 84647, 435-462-2456, (Fax) 462-3199

Wednesday, May 14, 2014

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
(307)775-6115

RE: Energy Gateway South Transmission Project; and
Transwest Express Transmission Line Project

Ms. Gertsch;

CT2a

We would like to express our concerns and desires relative to the above-noted project. Pursuant to 23 US Code Section 162 and Utah Code 72-4-303, Highway 31 in Fairview Canyon, Sanpete County, Utah is designated as a National Scenic Byway. A National Scenic Byway deserves protection because of the outstanding scenic, natural, historic and cultural qualities. The protection extends to the highway and adjacent areas.

If either the Gateway South or Transwest Express Transmission lines is approved for Fairview Canyon, certainly the intent, letter and spirit of the National Scenic Byway law will be seriously violated.

CT2b

In a 1984 Supreme Court opinion regarding cellphone towers, Justice Stevens wrote, "the character of the environment affects the quality of life and the value of property in both residential and commercial areas." If a cellphone tower affects quality of life, the huge transmission line and towers certainly will destroy the outstanding beauty and other qualities of Fairview Canyon. The Fairview Canyon route is ill conceived from a construction point of view. Additionally, there will be a scaring erosion and vehicle abuse among other serious problems affecting the canyon.

The agency route Thistle to Salt Creek Canyon has much less impact on property owners, residences and livestock operations. The cooperating agencies have carefully considered this route to have less impact upon National Forest lands and biological resources.

The applicant preferred route from Helper, Carbon County, westerly across the Wasatch Plateau, across part of Gooseberry Narrows project, down Fairview Canyon, across US Highway 89 North of Fairview and westerly to Salt Creek Canyon, and Nephi. This route crosses a portion of the Gooseberry Narrows project with its adjacent recreation. It then crosses several property owners. The terrain in Fairview Canyon is rugged, steep and not feasible for a power line. There would be excessive road work

Mayor: David H. Blackham **Recorder:** Jane Banks **Treasurer:** David Oxman **Police Chief:** Jim Wilberg
Sexton: Sandra S. Bigler **Council:** Justin Atkinson, Monte Bona, Ann Deuel, Jeff McDonald, Kevin Stallings
mtpleasantcity.com

CT2a

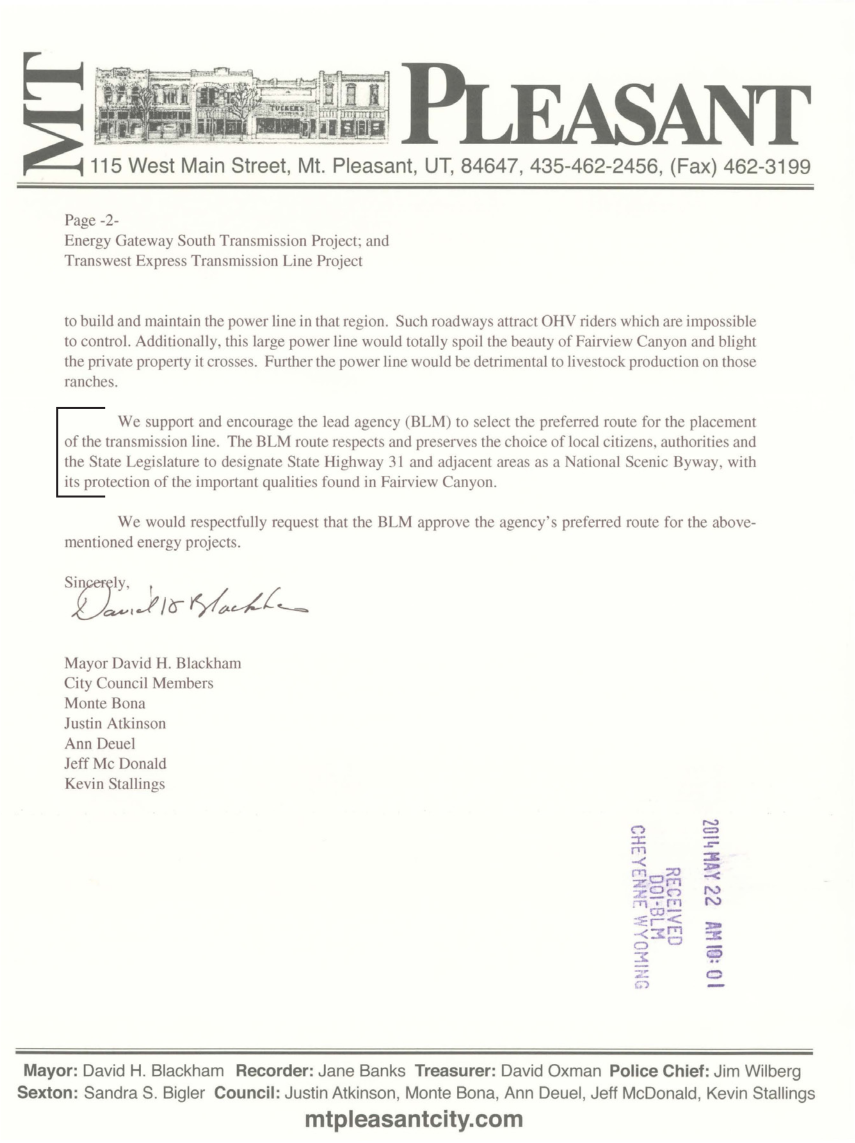
Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

CT2b

As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation.

Comment(s)

CT2 **Mount Pleasant City (cont.)**



MT PLEASANT
115 West Main Street, Mt. Pleasant, UT, 84647, 435-462-2456, (Fax) 462-3199

Page -2-
Energy Gateway South Transmission Project; and
Transwest Express Transmission Line Project

to build and maintain the power line in that region. Such roadways attract OHV riders which are impossible to control. Additionally, this large power line would totally spoil the beauty of Fairview Canyon and blight the private property it crosses. Further the power line would be detrimental to livestock production on those ranches.

CT2c

We support and encourage the lead agency (BLM) to select the preferred route for the placement of the transmission line. The BLM route respects and preserves the choice of local citizens, authorities and the State Legislature to designate State Highway 31 and adjacent areas as a National Scenic Byway, with its protection of the important qualities found in Fairview Canyon.

We would respectfully request that the BLM approve the agency's preferred route for the above-mentioned energy projects.

Sincerely,

David H Blackham

Mayor David H. Blackham
City Council Members
Monte Bona
Justin Atkinson
Ann Deuel
Jeff Mc Donald
Kevin Stallings

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE, WYOMING

Mayor: David H. Blackham **Recorder:** Jane Banks **Treasurer:** David Oxman **Police Chief:** Jim Wilberg
Sexton: Sandra S. Bigler **Council:** Justin Atkinson, Monte Bona, Ann Deuel, Jeff McDonald, Kevin Stallings
mtpleasantcity.com

Response(s)

CT2c

Comment and route preference noted. See comment responses to Comments CT2a and CT2b.

Exhibit P5
Special Interest

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al**

Audubon Rockies * Conservation Colorado * Southern Utah Wilderness Alliance
The Wilderness Society * Natural Resources Defense Council * Wild Utah Project
Western Resource Advocates * National Wildlife Federation * WildEarth Guardians

May 22, 2013

Delivered via electronic mail (GatewaySouth_WYMail@blm.gov) and U.S. mail (with attachments).

Tamara Gertsch
National Project Manager
Energy Gateway South Project
Bureau of Land Management
P.O. Box 21150
Cheyenne, WY 82003

Re: **Comments on Gateway South Transmission Draft Environmental Impact Statement**

Dear Ms. Gertsch:

These comments on the Draft Environmental Impact Statement (DEIS) for the proposed Gateway South transmission project (GWS) are submitted on behalf of the nine undersigned organizations.

Numerous projects across the western states are being pursued to address our nation's growing energy demands and the need to reduce greenhouse gas emissions from the electricity sector in the face of accelerating climate change. Some of these include large, multi-state transmission lines, such as Gateway South. We recognize the juggling act required – balancing energy supply considerations, reducing carbon emissions, keeping costs reasonable, remaining compliant with applicable federal laws (i.e. Bald and Golden Eagle Protection Act, Federal Land Policy and Management Act, etc.) and avoiding unnecessary impacts to wildlands and wildlife habitat. Our organizations have chosen to be engaged on this proposed project because of concern over serious impacts to landscapes and wildlife - both from climate change and the developments themselves - which are compounded by cumulative impacts. Balancing development with federal and state landscapes and wildlife policies is critical. Not doing so can undermine the economic values from the land that benefit human and ecosystem health, including clear water, clear air, and aesthetic qualities that cannot be replaced.

We continue to strongly advocate for utilization of the full mitigation hierarchy: avoidance, minimization, and compensatory off-site mitigation (in that order). There are opportunities along much of the route to follow existing transmission lines and roads, which we strongly support as a general practice. Unfortunately, even if GWS follows existing infrastructure, there will be significant impacts to numerous important resources and values along the 400-plus mile route. For this reason, it is critical that, if GWS is approved, it follows a route that has the lowest

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

impacts, and that the Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) include a robust on and off-site mitigation program detailing the mitigation obligations of the Bureau of Land Management (BLM), the Forest Service (FS), and the project proponent, PacifiCorp (doing business as Rocky Mountain Power).

Our comments address the following issues:

- Broad issues relating to transmission and energy development;
- The route with the lowest impact to environmental resources and values;
- Impacts of the various route alternatives;
- Route alternatives which would cause unacceptable impacts and should be eliminated from consideration;
- Weaknesses of the DEIS; and
- Recommended mitigation measures for the route alternatives

While our comments, where able, identify routes with the lowest impacts to environmental resources and values (which we strongly recommend that GWS follow if the project is approved), we are *not supporting* any routes at this time. We continue to strongly advocate for the following: (1) obtaining segment-specific information on impacts, (2) the completion and synthesis of sage-grouse recovery plans, (3) careful siting to avoid very local boundaries of wilderness-quality lands or sensitive habitats and other avoidance and minimization measures, and (4) written commitments to meaningful on and off-site mitigation in the ROD.

We look forward to working with the agencies and PacifiCorp to address the opportunities and challenges regarding the proposed GWS project.

Respectfully submitted by:

Signatories

Daly Edmunds
Regional Policy Coordinator
Audubon Rockies
105 West Mountain Avenue
Fort Collins, CO 80524
dedmunds@audubon.org

Luke Schafer
Western Slope Advocacy Director
Conservation Colorado
529 Yampa Avenue
Craig, CO 81625
luke@conservationco.org

Neal Clark
Field Attorney
Southern Utah Wilderness Alliance
P.O. Box 968
Moab, UT 84532
neal@suwa.org

Alex Daue
Assistant Director, Renewable Energy
The Wilderness Society
1660 Wynkoop St.,Suite 850
Denver, CO 80202
alex_daue@tws.org

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

Carl Zichella
Director of Western Renewable Transmission
Natural Resources Defense Council
111 Sutter Street, 20th Floor
San Francisco, CA 94104
czichella@NRDC.org

Gary Graham
Director of Lands Program
Western Resource Advocates
2260 Baseline Rd, Ste 200
Boulder, CO 80302
ggraham@westernresources.org

Kate Zimmerman
Policy Director of Public Lands
National Wildlife Federation
2260 Baseline Rd, Ste 100
Boulder, CO 80302
zimmerman@nwf.org

Kevin Mueller
Utah-Southern Rockies Conservation Mgr
WildEarth Guardians
1817 S. Main St, Ste 10
Salt Lake City, UT 84115
kmueller@wildearthguardians.org

Allison Jones
Executive Director
Wild Utah Project
824 South 400 West, Suite B-117
Salt Lake City, UT 84101
allison@wildutahproject.org

TABLE OF CONTENTS

I. Introduction and Context (p. 4)
II. Summary of lowest-impact route by state (p. 6)
III. BLM should provide information to the public on anticipated subscribers to GWS and how GWS will impact regional electricity generation and transmission (p. 7)
IV. FEIS should properly identify breadth of cumulative impacts and GWS should be designed to avoid, minimize, and effectively mitigate impacts (p. 7)
V. Inventory of and protection for lands with wilderness characteristics (p. 19)
VI. Overlap with and potential use of West-wide Energy Corridors (WWEC) (p. 20)
VII. Deficiencies in the GWS DEIS (p. 22)
VIII. Greater Sage-Grouse Resource Management Plan Amendments (p. 26)
IX. Concerns and opportunities regarding Greater sage-grouse and GWS (p. 27)
X. Golden Eagles and Raptors (p. 37)
- Appendix A – Wyoming: Detailed Analyses of Route Segments
- Appendix B – Colorado: Detailed Analyses of Route Segments
- Appendix C – Utah: Detailed Analyses of Route Segments

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

I. Introduction & Context: Energy and Climate Issues are Inextricably Linked with the Health of Our Environment and Communities.

Our nation's addiction to fossil fuels, coupled with unprecedented impacts from climate change/disruption, threatens as never before the environment and the ecosystems that sustain life. On a daily basis, habitat, ecosystems, and wildlands are lost to various forms of energy development and related encroachment.

To sustain our environment and communities, the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste; moderate demand through energy efficiency, conservation, and demand-side management practices; and rapidly develop clean, renewable energy technologies that are appropriately and sustainably sited and designed to avoid impacts to environmental resources.

In some cases, new transmission lines will be needed to carry remote renewable energy resources to population centers. However, renewable energy and associated transmission development are not appropriate everywhere on the landscape. Thorough review under the National Environmental Policy Act of 1969 (NEPA), including assessment of alternatives and examination of impacts, is an essential part of determining which of the many proposed projects should be permitted to go forward.

Long-term, environmentally responsible success of BLM 's renewable energy and transmission programs – and Interior's New Energy Frontier – depends on implementing policies and guidelines that direct projects to the most appropriate locations that avoid impacting conservation values and that subject them to the most appropriate design specifications and operational standards. This will limit environmental impacts and reduce obstacles to construction of the most appropriate projects. It will also have the additional critical benefit of enabling needed infrastructure investments to be made more rapidly and with less controversy and consumer cost.

We submit these comments in the hope that stakeholders can jointly do the following: 1) analyze the need for the project in light of renewable energy development opportunities proximate to load centers; and 2) identify a GWS route that avoids, minimizes and effectively mitigates impacts to the environment and communities traversed by the line. Principles underlying "Smart from the Start" dictate an assessment of the need for the project. A "Smart from the Start" approach to transmission planning and development incorporates:

- Thorough environmental reviews at the project- and landscape-level, including an assessment of cumulative impacts;
- Effective mitigation of unavoidable impacts on a site-specific and regional basis; and
- Early and ongoing input and coordination with all affected stakeholders.

The following principles aimed at reducing impacts and costs, speeding the transition to renewables, and ensuring robust public involvement should guide federal decision making on this and other transmission proposals:

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

1. Strong local, state, national, and regional commitments to energy efficiency and demand response. By reducing demand and controlling when energy is consumed, we can free-up transmission capacity on existing lines. At the 2013 annual meeting in Park City Utah, the Western Governors Association unveiled a 10-Year Energy Vision, which lays out overarching goals for Western energy policy. This Vision represents a consensus from states with very different resources and policy stances. It contains six energy goals, including energy efficiency.
2. Local renewables and distributed generation**.** Local renewable energy generation increases self-sufficiency, reduces transmission needs, creates local jobs, and can help make the grid more resilient. Many large load centers are near appropriate sources of renewables, including the desert southwest. While local and distributed resources alone will not meet greenhouse gas reduction goals, they play a critical role in reducing emissions and limiting impacts by reducing the amount of utility-scale development needed.
3. Transmission planning. Transmission planning should address reduction of carbon emissions, and factor in such issues as increased use of electric cars, efficient grid operation and energy storage. Planning a modern grid should take account of the cumulative impacts and life-cycle greenhouse gas (GHG) emissions of all connected and complementary actions. Finally, transmission planning should take into account and utilize geospatial risk analysis to avoid environmental conflicts as is presently incorporated into analyses being performed by the Western Electricity Coordinating Council. BLM is a stakeholder in these processes and should be able to utilize methodologies, data and results included in and flowing from them.
4. Transmission efficiency. This means using existing corridors and lines more efficiently – removing bottlenecks, upgrading wires and connections, adding "smart grid" features that increase grid capacity and flexibility, and eliminating redundancy. Operational efficiencies such as Balancing Authority Area coordination should also be considered.
5. Right-sized growth**.** Transmission resources need to make the best use of existing corridors and new developments should be scalable so that fewer corridors will be needed in the future. An example of this would be constructing a tower to which an additional circuit could later be added, or to which a higher voltage rating could be obtained through reconductoring at a later time. Efficiently scaling transmission also reduces carbon emissions by reducing line losses.
6. Robust stakeholder engagement. The public and non-governmental organizations should have numerous formal opportunities for engagement in planning and permitting processes.

Transmission policy is no longer the exclusive province of utilities and regulatory commissions — conservationists and other interests are actively involved in the dialogue and policy process. Transmission must be carefully planned and sited to protect biological and cultural values while providing access to clean energy, enhance energy efficiency efforts, limit increased use of polluting and GHG emitting fossil fuels, and support electrification of our transportation systems. Transmission plays a central role as we work to improve the grid, make it smarter, and clean up its electricity supply.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

The American West is too precious and unique to sacrifice. It is home to significant sources of renewable energy, such as solar, wind, and geothermal power. The western states, their residents, and the nation will need these resources to repower America and to meet the challenge of global climate change. The West is also home to remarkable wildlands (including many lacking the protection they warrant), diverse wildlife, and irreplaceable cultural resources. Because of this, it is vital to find the best sites for new clean energy projects and transmission lines so we can harness renewable energy while protecting the biological and cultural resources that make the West unique.

II. Summary of Environmental Impacts and Key Recommended Off-Site Mitigation Measures

Summary of Environmental Impacts:

Conservation groups in each of the states through which GWS is proposed to traverse have endeavored, given the available data, to examine the routes to determine level of environmental impacts. All of the potential GWS routes would have significant impacts.[1] Our organizations note that the manner in which data is presented in the DEIS, mostly by entire Alternative routes rather than segments, made comparisons challenging (see Section VII for additional information). Our organizations strongly encourage this information be made available for all segments in the FEIS, to improve selection of a route with the least amount of resource impacts.[2] Given our current knowledge, if GWS is approved, it should follow these route segments. See Appendices A-C for state specific route information. SI1a

Summary of recommended off-site mitigation measures:

See Section IV for the full description of the mitigation hierarchy (avoid, minimize, mitigate) and detailed recommendations, as well as route-specific sections. This sequence is noted in Appendix K of the DEIS.

SI1b

- Identified mitigation actions on public lands must be durable, which is that protection and management of public lands must be effective for at least as long as the impacts;
- Protection of public lands through designation for conservation management, such as Areas of Critical Environmental Concern or management to protect Lands with Wilderness Characteristics with management plans for these areas that include comprehensive and measurable protections for the resources in question;
- Purchase and protection of private lands, either maintained in private ownership or transferred to federal ownership with a suitable designation for durable and protective conservation management.

SI1c [1] A number of our groups proposed alternate routes as part of the GWS scoping process and TransWest Express (TWE) Draft EIS process. We encourage BLM and the Applicant to continue to consider these routes through the NEPA process.

SI1d [2] Developing and providing this information for all segments, which could be accomplished through GIS analyses of data already compiled for the DEIS, would allow for better analysis of alternative route segments and help identify mitigation opportunities.

Response(s)

SI1a Section 2.5.1.3 and Figure 2-7 for the Final Environmental Impact Statement (EIS) presents the systematic and progressive analysis for screening and comparing local areas (Level 1 analysis) then subregional areas (Level 2 analysis) that was conducted to narrow the number of alternative routes and route variations and determine the most environmentally acceptable routes to be addressed in the EIS. That is, for each level, once the impacts along each of the areas (local/sublocal/regional) of alternative routes and route variations had been analyzed, the areas of alternative routes and route variations were screened and compared to identify which were most environmentally preferable and to eliminate from further consideration less preferable ones (in accordance with criteria at 40 Code of Federal Regulations [CFR] 1502.14). The Level 1 and 2 analysis results are recorded in the Energy Gateway South Transmission Project (Project) record. Routes considered and eliminated from detailed analysis through the Level 1 and Level 2 screening and analysis are described in Section 2.6.2 in the EIS. The Level 3 analysis involved combining the suitable segments of routes from the first two levels of screening to form complete routes. The Level 3 analysis is presented in the EIS. The commenter is referred to Tables S-1a through S-1d in the EIS that provide a detailed comparative analysis (Level 3) of the resources for each alternative route and route variation considered in detail in the EIS. The tables identify key resource inventories and associated impacts for each resource based on the analysis presented in Chapter 3. Further, the commenter is referred to the Map Volume (MV) (Volume II) that accompanies the EIS. The map volume contains 1 map showing construction access 6 levels that predict (1) the general type of access required for each mile of alternative route and (2) the associated disturbance, and 25 maps showing resource inventory and impacts. The inventory and impacts are reported by link. Finally, because of this systematic and progressive analysis, the Agency Preferred Alternative identified for the northern Project area (from Aeolus Substation, Wyoming, to near U.S. Highway 40 at the Colorado-Utah border) and southern Project Area (from the Colorado-Utah border to the Clover Substation, Utah) in the EIS does indeed reflect the agencies' preference for consideration by the agency decision-makers when selecting and approving a route.

SI1b In general, the need for additional public land to be designated for conservation management could be considered in future resource management plan (RMP) revisions, but is not appropriate for a project-level evaluation. No additional special management areas are proposed as part of this Project, and development of management plans for special designation areas is beyond the scope of this Project. Impacts on non-wilderness study area (WSA) lands with wilderness characteristics are disclosed in Sections 3.2.14 and 4.3.14 of the Draft EIS and Sections 3.2.16 and 4.3.16 of the Final EIS. Development of management plans for non-WSA lands with wilderness characteristics is beyond the scope of this project.

SI1c See next page for response to SI1c.

SI1d See response to Comment SI1a.

Comment(s)

Response(s) - continued

SI1 **Audubon Rockies et. al (cont.)**

SI1c The Bureau of Land Management (BLM) reviewed scoping comments to confirm that all alternative routes (and route variations) suggested during scoping were considered. A description of modifications to the preliminary alternative routes and route variations based on comments received from the public and agencies during the scoping process, including documentation of routes eliminated from detailed analysis, is summarized in the Energy Gateway South Transmission Project Siting Study Report (December 2012), which is incorporated into the EIS by reference. The report can be found on the BLM's Project website at: http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

III. BLM should provide information to the public on anticipated subscribers to GWS and how GWS will impact regional electricity generation and transmission.

SI1e BLM should include information on likely sources of power that might run on the line. Every effort should be made to place an emphasis on providing capacity for renewable energy sources. Generation and transmission of well-designed renewable energy solutions are needed for transitioning away from sources of energy that are altering our climate and threatening wildlands, wildlife, water, public and economic health, and our national security.

SI1f Since GWS was initially proposed, numerous coal retirements have been announced throughout the region[3]. These retirements will create transmission capacity on existing lines. We encourage the Agencies to analyze the impact which projected coal retirements throughout the region will have on transmission needs.

SI1g In this rapidly-changing energy market, exact assessments about the clean energy merits of a proposed transmission project are not possible. However, the DEIS could do much more to incorporate readily available information to create a credible picture of the demand for renewable energy resources, how available transmission capacity constrains their development, and the degree to which GWS could be a viable solution to this issue in the context of region-specific infrastructure policy and market factors.

SI1h SI1i ***Recommendation:*** PacifiCorp and the Agencies should provide continuous, transparent updates on potential subscribers to the line and explicit statements of generation intent for the line in a manner that does not violate the FERC open access rules. The FEIS should provide greater information on regional energy planning and policy, coal retirements in the region, and the ways in which GWS might complement these policies.

IV. FEIS Should Properly Identify Breadth of Impacts *and* GWS Should be Designed to Avoid, Minimize, and Effectively Mitigate Impacts.

SI1j With the TransWest Express Draft EIS, Northwest Colorado Greater Sage-Grouse Resource Management Plan and Gateway South Draft EIS all occurring concurrently, BLM must recognize the connected and cumulative effects that these projects have upon one another and have that reflected in the analysis in the Final EIS's of these plans. This information is critical to development of an appropriate suite of mitigation efforts.

---

[3] Since 2005, actual and announced coal retirements in Wyoming, Colorado, Utah, Nevada and California include:

- California: ACE Cogen (108 MW), Mt Poso Cogen (62 MW), Port of Stockton (54 MW), Stockton Cogen (60 MW)
- Colorado: Arapahoe Boilers 3&4 (158 MW), Cameo Boilers 1&2 (75 MW), Cherokee (802 MW), Trinidad (4 MW), Valmont Boiler 5 (192 MW), WN Clark Boilers 1&2 (44 MW);
- Nevada: Reid Gardner (553 MW), NV: Mohave (1,636 MW); North Valmy (522 MW), TS Power Plant (227.5 MW);
- Utah: Carbon (189 MW), Kennecott (100 MW), IPP - convert to gas (1800 MW);
- Wyoming: Naughton Boiler 3 (326 MW), Neil Simpson Boiler 5 (22 MW), Osage Boilers 1-3 (36 MW)

Response(s)

SI1e It is not BLM's role or responsibility to verify PacifiCorp's (doing business as Rocky Mountain Power, Applicant) interests and objectives for a proposed project. As a regulated utility, the need for transmission projects proposed by PacifiCorp is scrutinized by the Public Utilities Commission. The responsibility of BLM and other land-management agencies is to respond the application for right-of-way across lands it administers. Regarding the scope of analysis presented in the EIS, it is beyond the scope of existing science to relate a specific source of greenhouse gas emission (GHG) with the creation (or mitigation) of any specific climate-related environmental effects. Further, since the specific effects of a particular action, which may contribute to or mitigate against climate change, cannot be determined, it is also not possible to determine whether any of these particular actions will lead to significant climate-related environmental effects. Finally, there are still not regulatory standards for climate change. Thus, the BLM believes the analysis in the EIS represents the best available science as required by the Council on Environmental Quality (CEQ) guidelines.

SI1f See response to SI1e.

SI1g See response to SI1e. The BLM understands the Applicant considered a range of technologies and considers the project description to reflect the best available technologies. Undergrounding the transmission line was considered and eliminated, as explained in Section 2.6.1.4 of the Final EIS.

SI1h See response to SI1e.

SI1i See response to SI1e.

SI1j The TransWest Express Project and the federal sage-grouse management are considered in the analsyis of potential cumulative effects (refer to Chapter 5). The projects are not connected actions as defined by CEQ (40 CFR § 1508.25)

The proposed BLM RMP and USFS land and resource management plan (LRMP) sage-grouse amendments and the EIS incorporate the same mitigation hierarchy objectives of avoiding, minimizing, and mitigating for impacts on sage-grouse as required by BLM's regional mitigation strategy (Draft - Regional Mitigation Manual Section – 1794) and use the best available information. If an action alternative is selected, the BLM's decision on the Project would comply with all relevant sage-grouse stipulations in applicable BLM RMPs at the time the decision is issued.

	Comment(s)	Response(s)
SI1	**Audubon Rockies et. al (cont.)**	
SI1k	The Final EIS should include a detailed discussion of the potential direct and indirect impacts of construction, operation, and maintenance of this project (including estimated quantification by routes): • Direct loss (i.e. due to collision with motor vehicles during construction, electrocution, collision with guy wires, etc) • Habitat loss, • Habitat degradation (invasive species etc) and fragmentation (roads and ROWs, etc) • Displacement of individuals • Barrier effected • Population loss and reduced breeding success • Exposure to noise and human activity, • Increased predation risk (i.e. creation of mammalian predator travel lands, increased nest parasitism, etc.)	Comment noted. The text has been edited for clarity. Sections 3.2.7.4.3 and 3.2.8.4.3 identify and evaluate the types of potential effects on wildlife and special status wildlife that may occur as a result of construction, operation, and maintenance of the Project. The types of effects identified in this comment are addressed in these sections. Quantification of effects by alternative route and route variation are presented in Sections 3.2.7.5 and 3.2.8.5. However, as identified in these sections, limited availability of data precludes the ability to quantify many types of effects or effects on some species analyzed.
SI1l	The Agencies and PacifiCorp must be committed to, and budgeted for the suite of mitigation efforts. These efforts must include all the steps in the mitigation hierarchy, including avoiding impacts wherever possible, minimizing unavoidable impacts through the use of best management practices on-site, and off-setting remaining impacts through off-site, compensatory mitigation. The FEIS must include a mitigation program that fully addresses impacts to wildlife habitat, Lands with Wilderness Characteristics, and other resources and values.	Comment noted.
SI1m	In October 2013, Interior Secretary Sally Jewell issued *Order No. 3330* to establish a Department-wide mitigation strategy that focuses on mitigation opportunities at the landscape level. It is intended to encourage early integration of mitigation measures in project design and planning, a landscape-scale approach to conservation, transparency and consistency of mitigation measures, and recognition of the effects of climate change on the environment. Order No. 3330 is aimed at increasing permit efficiencies and financial predictability for developers while improving state and federal regulatory agencies' ability to plan for long term and large-scale conservation investments. BLM should follow *Secretarial Order 3330 (Improving Mitigation Policies and Practices of the Department of the Interior)* and the recent report from DOI's Energy and Climate Change Task Force *(A Strategy for Improving the Mitigation Policies and Practices of the Department of the Interior)* and employ landscape-level mitigation to mitigate the detrimental effects the transmission line will have upon wildlife and lands with wilderness character. The best way this can be achieved is through the designation of lands, for example, Areas of Critical Environmental Concern (ACEC) could be designed to mitigate impacts to Greater sage-grouse and Special Recreation Management Areas (SRMA) with backcountry emphasis for impacts to lands with wilderness character units. This landscape-level mitigation and all compensatory mitigation should be identified prior to project approval.	As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation), developed in coordination with cooperating agencies for the selected route.
SI1n	While avoidance and minimization are critical first and second steps in the hierarchy, off-site, compensatory mitigation for unavoidable impacts is also necessary. Unfortunately, the DEIS is wholly inadequate in terms of off-site mitigation. In fact, as far as we can tell, the DEIS does not commit to or analyze any specific off-site mitigation for GWS but simply lists examples in	See next page for response to SI1n
SI1o	Appendix K. Appendix K states that "when applying mitigation at any level of the mitigation	

Comment(s)

Response(s) - continued

SI1 **Audubon Rockies et. al (cont.)**

SI1n See comment response to SI1m.

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the Plan of Development (POD) prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

SI1 Audubon Rockies et. al (cont.)

	Comment(s)	Response(s)
SI1o	hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project." Clarification is needed as to whom would monitor this and how it would be determined. This information should be publically available.	When applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation, to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.
SI1p	*The lack of details regarding off-site mitigation in the DEIS make it impossible to fully and fairly evaluate the impacts of the proposed GWS project.* It is unacceptable to wait until after the ROD is signed to identify and require specific off-site mitigation measures.	See response to Comment SI1n.
SI1q	Conservation opportunities across ownerships at landscape level scale should be pursued as mitigation where possible. We need to preserve the ability of species and habitats to adapt to a changing climate. Climate impacts are occurring now and have measurable impacts on the landscape. Consequently larger scale conservation efforts provide a useful hedge against expected impacts the extent to which cannot be precisely forecast today. Such approaches to mitigation are being employed in the State of California in the BLM and DOE California Desert Renewable Energy Conservation Plan (DRECP). They should be considered here as well.	The BLM believes the intent of the mitigation presented in the California Desert Renewable Energy Plan is inherent in the design features and/or mitigation measures established for the Project.
SI1r	In accordance with BLM policy, the following factors indicate that off-site mitigation is appropriate for this project: • GWS is a major electrical right-of-way project, one of the types of large development projects for which offsite mitigation (at the scale necessary) may be appropriate; • GWS is likely to affect resources and values of high public importance; and • GWS may have permanent impacts that cannot be mitigated onsite.	See response to Comment SI1n.
	BLM has recently published a Draft Regional Mitigation Manual which includes requirements and guidance on off-site mitigation.[4] President Obama also recently issued a Presidential Memorandum on improving siting, permitting and mitigation for transmission development.[5] Both of these documents offer valuable tools for continuing to improve the conservation outcomes for mitigation for project impacts, and should be used to improve mitigation for GWS in the FEIS.	
SI1s	There are numerous resources with additional information on best practices for mitigation for transmission line planning and development. These include, but are not limited to the following: • The Avian Power Line Interaction Committee's updated guidance document – "Reducing Avian Collisions with Power Lines: State of the Art in 2012" *available at:* http://www.aplic.org/ .; • Edison Electric Institute's "Mitigating Bird Collisions with Power Lines" *available at:* http://www2.eei.org/products_and_services/descriptions_and_access/mitigating_birds.htm	The BLM understands the Applicant has worked with the U.S. Fish and Wildlife Service (FWS), Avian Power Line Interaction Committee (APLIC), and other agencies to develop an Avian Protection Plan (APP) for their facilities and distribution and transmission lines in their service territory. The APP and APLIC guidelines for protection and collisions are referenced at a high-level in the EIS. Project-specific standards, methods, and measures (including avian-specific mitigation) will be described in the POD to be developed in coordination with cooperating agencies.

---

[4] *Available at:* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2013.Par.57631.File.dat/IM2013-142_att1.pdf

[5] *Available at:* http://www.whitehouse.gov/the-press-office/2013/06/07/presidential-memorandum-transforming-our-nations-electric-grid-through-i

Comment(s)

SI1

Audubon Rockies et. al (cont.)

SI1s

- Western Resource Advocates' "Smart Lines" report, *available at:* http://www.westernresourceadvocates.org/energy/smartlines.php; and
- Wild Utah Project's "Best Management Practices for Siting, Developing, Operating and Monitoring Renewable Energy in the Intermountain West" *available at:* http://wildutahproject.org/files/images/BMP%20for%20Renewable%20Energy-2012-WUP.pdf

a. Avoiding Impacts

Planning: One of the first and most important steps to avoid as many impacts as possible to sensitive resources is to plan potential transmission corridors so that they are developed within existing corridors, ROWs, brownfields and other degraded lands, and other areas with co-locating opportunities.

SI1t

Equally important is planning to avoid lands within the categories listed below that are either statutorily protected from development such as transmission and those that should otherwise be avoided:

1. National Park Service designated lands;
2. National Wildlife Refuges;
3. National Monuments;
4. Wilderness Areas;
5. Wilderness Study Areas (WSAs);
6. National Conservation Areas;
7. Other lands within BLM's National Landscape Conservation System (NLCS), such as Outstanding Natural Areas;
8. National Historic and National Scenic Trails;
9. National Wild, Scenic, and Recreational Rivers, study rivers and segments, and eligible rivers and segments;
10. Riparian areas, wetlands, and significant washes;
11. Threatened, endangered, candidate and sensitive species habitat, as well as critical core and linkage areas for wildlife habitat;
12. Lands with known occurrences of threatened, endangered, candidate and sensitive species
13. Lands previously acquired or preserved for conservation purposes;
14. Areas of Critical Environmental Concern (ACECs);
15. Special Recreation Management Areas (SMRAs) (depending on the extent to which the impacts of a line could compromise the resources that the SRMA was designated to protect);
16. Citizen-proposed wilderness areas;
17. Other lands with wilderness characteristics (LWC), including but not limited to BLM-identified lands with wilderness characteristics managed to protect those resources and BLM-identified lands with wilderness characteristics not managed to protect those resources;
18. Traditional Cultural Properties;
19. Sacred sites; and

10

Response(s)

SI1t

During their review of the alternative routes and route variations, the BLM and U.S. Forest Service (USFS) have endeavored to avoid resources with statutory protections to the extent possible. All resources and resource categories listed by the commenter are analyzed in the Final EIS.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1t

20. Important Bird Areas (IBAs)
21. Lands that have been identified as having biological, cultural, and/or historical significance through federal, state and local planning efforts
22. Other lands protecting wildlife with a conservation easement funded in part by a state agency (including Colorado Parks and Wildlife)

SI1u Most of the categories of protected areas are well-known, the importance of their protection supported by most environmental and other stakeholders, and their locations are included in a number of available geospatial data sets, which makes it easier to plan for avoidance of these important lands. Western Electricity Coordinating Council's Environmental Data Task Force has tasked with investigating and developing recommendations for methodologies to incorporate environmental and cultural data into the transmission planning process for the Western Interconnection. As a result, EDTF has developed a *Recommendations Report*[6] and a *Geospatial Data Viewer*[7]. These and other EDTF products are available for public use, facilitate knowledge transfer within planning organizations, and are in use within WECC and outside of WECC by industry, regulators, and other stakeholders.

Important wildlife movement corridors, landscape connections, and crucial wildlife habitats within those landscapes are threatened by many types of development throughout the West. These corridors and connections are crucial to the current and long-term viability of game and nongame wildlife, especially as they provide adaptation options in the face of a changing climate. SI1v The Western Governors' Association (WGA) established its policy to protect wildlife migration corridors and crucial wildlife habitat in the West. As a result, the Crucial Habitat Assessment Tools[8] has been launched, including state CHATs which display crucial wildlife and corridor information across the region. Depending on the wildlife and landscape, transmission can contribute to loss, fragmentation, and diminished resiliency of these habitats. Consequently, planning and siting to avoid or minimize impacts to the wildlife corridors and landscape connections is very important.

Siting: Avoiding sensitive resources can also be achieved during the siting of actual transmission ROWs within the proposed corridors. Although many of the specific comments below are based on the two-mile analysis corridor, we are aware that the actual ROW corridor will be narrower (likely 250' in most places) if the application is approved. This approach to avoidance will be particularly important when transmission line ROWs are planned near sensitive habitats for species of concern including the following:

- endemics with restricted distributions such as the **Burrowing Owl**
- migratory birds protected under the Migratory Bird Treaty Act with unique critical habitat requirements, including **Mountain Plover**

---

[6] http://www.wecc.biz/committees/BOD/TEPPC/SPSG/EDTF/Shared%20Documents/Report%20to%20SPSG/Environmental%20Recommendations%20for%20Transmission%20Planning%20-%20Synopsis%20Revised%2005-27-2011.pdf This information has not previously been available in a single location and represents a significant step towards understanding potential environmental and cultural aspects of planning transmission in the Western Interconnection.

[7] http://184.169.179.203/flexviewers/WECC2/

[8] http://westgovchat.org/

11

Response(s)

SI1u Comment noted. The BLM understands the Western Electricity Coordinating Council (WECC) resources referenced are intended for use in transmission planning efforts rather than project-specific analyses.

SI1v While state CHATs provide important tools for general planning purposes, the Draft EIS used an in-depth, systematic analysis that included assessing the impacts of each alternative route and route variation on wildlife, including migration corridors and crucial habitats, and how the impacts could be mitigated most effectively (refer to Chapter 3, Sections 3.2.7 and 3.2.8). Data depicting wildlife migration corridors and crucial habitats was collected and used in the EIS analysis from state wildlife agencies in each of the three states crossed.

Comment(s)

SI1 Audubon Rockies et. al (cont.)

- Endangered Species Act (ESA)-listed or candidate species such as **Greater Sage-Grouse and Desert Tortoise**, for which preserving high-quality reintroduction habitat is essential;
- relatively widely distributed but uncommon species of conservation concern whose habitat coincides with areas likely to be developed, such as raptors including **Golden Eagle** protected by the Bald and Golden Eagle Protection Act (BGEPA) and **Ferruginous Hawks**; and
- wide ranging, relatively common species sensitive to habitat fragmentation and disturbance, such as **American pronghorn**, **mountain lion**, **black bear**, **mule deer,** and **elk.**

SI1w Avoiding impacts during siting will require a great deal of geospatial data on the locations of the protected and sensitive lands and species. The quality and availability of these data will vary considerably across the extent of the proposed GWS project. Some regional and state-based data sets will assist with this fine-scaled siting work but many of those are mostly focused on public lands or are incomplete. The absence of data from private or tribal lands does not necessarily indicate the absence of sensitive resources. Consequently, actual on-the-ground surveys consistent with guidelines provided by the US Fish and Wildlife Service (USFWS) or state wildlife agencies should be required before ROWs are finalized and construction begins.

Recommendations: GWS should avoid any of the lands included under the categories listed above. The most accurate, up-to-date geospatial and wildlife data and the most current scientific and other formal guidance must be used to avoid impacting sensitive resources during establishment of the ROW and during actual construction. In addition, we recommend that the Agencies follow the state-by-state guidance below to avoid or minimize additional impacts.

b. Minimizing Impacts

We recognize that it is unlikely that all impacts can be avoided by planning and during development of GWS. However, the rigorous use of environmentally driven Best Management Practices (BMPs) can minimize the habitat and direct wildlife impacts.

SI1x **Construction BMPs.** Construction BMPs will be particularly important if the line is developed. The major issues that should be addressed include management of sensitive wildlife, land and water resources; complying with environmental laws, including storm water pollution prevention; controlling erosion and sediments; and assuring compliance with reclamation standards. For sensitive resources, it is important to conduct preconstruction surveys of ROWs, substations, office sites, and storage yards for biological, cultural, and paleontological resources. The Agencies should require and approve species-specific and site-specific construction plans to avoid, minimize and effectively mitigate impacts to sensitive resources.

The Agencies should require minimal construction of access roads and ROWs to reduce disturbance, establish speed limits on access roads, require stringent control of invasive species, and require equipment washing before entry into sensitive areas. Spill response and fire prevention materials should be located with crews during construction. Finally, erosion and

12

Response(s)

SI1w Datasets used for siting of the Project were coordinated with cooperating agencies involved with the Project and are updated at key milestones throughout the development of the EIS. On-the-ground surveys will occur prior to construction. The results of the surveys will be incorporated into the POD and any additional adjustments required after the results of the survey would occur, and any necessary variances would also be coordinated with the agencies.

SI1x See response to Comment SI1n.

	Comment(s)	Response(s)
SI1	**Audubon Rockies et. al (cont.)**	
SI1x	sediment control devices should be installed and maintained during construction, and then removed when no longer necessary.	
SI1y	We encourage inclusion of the construction BMPs that the Agencies and TransWest have committed to in Appendix C of the TWE DEIS. Additional recommended BMPs for GWS include: • Requiring a tower design that minimizes and discourages perching and nesting by raptors and ravens; • Patrol and monitoring to detect raven nests and steps to remove them; • The project site will be clearly marked or flagged at the outer boundaries prior to initiation of ground disturbance. Project activities shall be limited to the marked or flagged areas and whenever possible, activities shall occur within previously disturbed areas; • The proponent shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Where possible and if needed, topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate re-growth of vegetation; • Noxious weeds will be controlled on disturbed areas within the limits of the right-of-way; • Minimizing the construction of new access roads; • Taking appropriate steps to prohibit and discourage recreational use of them, including official BLM closures, signing and patrols. • A 15 mph speed limit shall be required for all project vehicles on the project site and unposted access roads; • No cross-county travel or travel outside the ROW would be permitted; • All project-related trash and food items shall be disposed properly in predator-proof containers with resealing lids. Trash, stakes, flagging materials, temporary facilities, litter, and all other project-related materials shall be removed from site upon completion of project activities.	The BLM believes the intent of the best management practices identified in the EIS prepared for the TransWest Express transmission project and the additional best management practices suggested are inherent in the design features of the Proposed Action for environmental protection (Table 2-8) and/or selective mitigation measures (Table 2-13) established for this Project.
SI1z	Because of concerns to avian species, the following mitigation measures should be required: • All power lines shall be designed, installed, and constructed to be avian-safe in accordance with the standards outlined in “Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006” (APLIC 2006); • The Avian Power Line Interaction Committee’s updated guidance document should be used – “Reducing Avian Collisions with Power Lines: State of the Art in 2012” • All ground-disturbing activities will be conducted outside the migratory bird nesting season (March 15 August 31). If ground-disturbing activities cannot be avoided during this time— period, pre-construction nest surveys shall be conducted by a BLM-approved biological monitor with the following guidelines: ▪ For all non-raptor bird species, surveys shall cover all potential nesting habitat in and within 100 feet of the area to be disturbed; ▪ Surveys must be conducted between sunrise and 3 hours post-sunrise when birds are most active; ▪ Active bird nests will not be moved during the breeding season unless the holder is expressly permitted to do so by the USFWS, BLM, and NDOW;	The BLM continues to work closely with the FWS and the Applicant to develop avoidance and minimization measures to reduce effects on avian species based on industry best practices. Design features of the Proposed Action for environmental protection and site-specific selective mitigation measures would be used under all alternative routes and route variations in the Draft EIS to reduce effects of the Project on avian species. For the Final EIS, the BLM has revised and expanded the analysis of effects on migratory birds. This revised analysis is located in Section 3.2.9 of the Final EIS. Applicable minimization measures are listed in Section 3.2.9, Mitigation Planning and Effectiveness, and include measures intended to achieve similar results to those proposed. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys). The use of perch deterrents to limit predation on species status species is not promoted by the BLM or FWS as the primary means of mitigation due to evidence suggesting limited effectiveness in many cases and the potential for increased risk of electrocution risk for avian species. Rather, increased predation resulting from transmission towers will be minimized by colocating the line with existing transmission lines to the extent feasible, which will reduce the proliferation of perch sites in new areas across the landscape. Also, the Applicant is not proposing any guyed transmission structures.

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1z

- All active nests and disturbance or harm to active nests will be reported within 24 hours to the USFWS, the BLM, and NDOW upon detection. The biological monitor will halt work if it is determined that active nests are being disturbed by construction activities, until further direction or approval to work is obtained from the appropriate agencies.
- In areas where increased predation risk may adversely affect a federally listed species, the applicant should utilize tubular steel towers with perch deterrents to limit perching opportunities for raptors.
- Use transmission structures that do not include guy wires, particularly in areas where guy wires may pose an additional collision risk to low-flying birds. Where unavoidable, bird diverters will be placed on guy wires in important bird habitat.

SI1aa

Use of technology to minimize impacts. Transmission technology continues to improve, as do examples of successful implementation of new techniques to minimize impacts. These include but are not limited to: upgrading the voltage rating of existing lines within an already established corridor, reconstructing lines in already established corridors, locating new transmission in already established corridor and where necessary undergrounding lines. Advanced tower designs, using double circuits on compact monopoles and performing tower installation and maintenance with helicopters are commonly utilized practices that reduce surface soil impacts in sensitive habitats. Though these advanced approaches may increase technical and economic challenges for projects, they will only become more important to consider as transmission is called on to "thread the needle" between protected and sensitive landscapes and urban communities. We recommend that the Agencies fully analyze opportunities to employ these technologies in the FEIS.

Specifically, consideration should be given to using underground transmission cable where feasible. This option may be important in addressing public perception concerns (i.e. public health, property value, congestion concerns, aesthetics, etc.) around human population centers, thus potentially providing a greater range of alternatives in surrounding landscapes. Aerial lines are exposed to fire and smoke, ice and snow, wind and other natural disasters and overhead cables can be easily accessed for sabotage. Underground infrastructure is far less vulnerable to some risks and, thus, may be considered more reliable in certain applications.

SI1ab

Existing special designations described in federal land management land use plans to protect biological, scenic, visual, cultural, and historic resources must be maintained and honored. For example, for any sections of the proposed line crossing particularly sensitive areas, the Agencies should analyze both re-routing to avoid those areas and burying the lines in or near existing ROWs to lessen the impacts. We appreciate that line burial is an expensive option, but use of this technique in Europe and Australia, both terrestrial and subsea, suggests that it could be an option to mitigate impacts to sensitive resources when rerouting may not be feasible. Some technologies (i.e. cross-linked polyethylene cables, superconductors, elpipes, etc.) are mechanically robust options for burial. While distances are generally short, advances are being made. In Connecticut, the Middletown-Norwalk project broke ground in 2006 and buried 345-kV over 26 miles.

14

SI1aa The BLM understands the Applicant considered a range of technologies and considers the project description to reflect the best available technologies. Undergrounding the transmission line was considered and eliminated, as explained in Section 2.6.1.4 of the Final EIS. Multiple alternative routes and route variations that avoid this area were considered and no additional route variations are warranted.

SI1ab See response to Comment SI1aa.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ac **Recommendation**: The Agencies should fully analyze opportunities to employ new transmission technologies, outlined above, in the FEIS.

c. Mitigating impacts through off-site, compensatory mitigation

SI1ad Mitigation is an important requirement of NEPA. In fact, in Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989) the court stated that: "*Omission of a reasonably complete discussion of possible mitigation measures*" undermines NEPA and the ability to assess the severity of environmental impacts. Following BLM's Special Status Species Policy and its ESA Section 7(a)(1) affirmative obligations to conserve and recover listed species, as well as the BLM's requirements to manage for the full range of resources and values on public lands, the FEIS should detail how specific impacts from GWS will be mitigated through required, specific off-site mitigation actions. It is unacceptable to defer identification of and commitment to specific off-site mitigation measures until after the FEIS is published. Without this information, the public cannot fully and fairly analyze the impacts of the proposed GWS project.

SI1ae Before a rigorous discussion of mitigation can take place, however, the complete extent of the potential impacts must be carefully assessed. This assessment must include for each endangered and threatened species – and should include for all candidate species – science-based estimates of the direct, indirect, and cumulative impacts throughout the length of the proposed line, and how the cumulative impact of the entire line adds to the other ongoing and reasonably foreseeable impacts throughout the ranges of the targeted species.

SI1af Ecosystem-level planning and strategies should be employed in addition to species-specific analyses. An assessment tool or evaluation strategy approved by USFWS should be used to quantify the interim and permanent impacts (injury) to habitats (direct, indirect, and cumulative as outlined above) and the ecological services provided by those habitats. This will enable a more accurate and predictive approach to mitigating impacts across the entire line.

SI1ag The Agencies should implement a "no net loss" or a "net gain" requirement for resources and values, with the goal of achieving a "net conservation benefit" for special status resources and species, including BLM Special Status Species. The Agencies should ensure that any loss of resources or values associated with the GWS project is compensated with the addition and protection of equivalent or better resources and values offsite. The Agencies should ensure a net benefit of in-kind habitat value.

SI1ah If Lands with Wilderness Characteristics are damaged by GWS, amendments should be made to the Resource Management Plan for the region to protect other, equally valuable Lands with Wilderness Characteristics near the area of impact. Additions of lands and resources should equal or exceed the value of any resources or values which are lost. The Agencies should also make a determination about the value of the habitat to be impacted and establish mitigation requirements for the specific habitat types impacted.

SI1ai Additions could be gained through some combination of three primary mechanisms:

- The BLM must designate and manage public lands to ensure that any mitigation on those lands is protected to provide enduring conservation benefits. To help achieve more enduring protections, the BLM must layer existing authorities available to the agency including designation of lands as *Areas of Critical Environmental Concern* or protective

Response(s)

SI1ac Comment noted. See response to SI1aa.

SI1ad See next page for response to SI1ad

SI1ae Potential direct, indirect, and cumulative impacts on endangered, threatened, and candidate species for each alternative route and route variation were analyzed based on the best available information in the EIS. The results of the direct and indirect effects analyses are presented in the following Sections: 3.2.6 Special Status Plants, 3.2.8 Special Status Wildlife, and 3.2.10 Fish and Aquatic Resources. Cumulative impact assessments are presented in Sections 4.3.6 Special Status Plants, 4.3.8 Special Status Wildlife, and 4.3.10 Fish and Aquatic Resources. The analysis of cumulative effects, including identification of analysis areas for effects on federally listed and candidate species, reflects CEQ guidelines for implementing National Environmental Policy Act (NEPA), and BLM NEPA regulations and guidance.

SI1af Thank you for your suggestion. The BLM believes that the level of analysis included in the EIS is adequate for the scope of the Project. Please note that wildlife impacts are analyzed and discussed at the habitat-level. Also, the cumulative impact analysis assesses different resources at different geographical (and temporal) extents, based on what deemed appropriate for the resource. The methodology for all biological resources was developed and approved in coordination with the cooperating agencies assisting the BLM in preparation of the EIS, including the FWS.

SI1ag As a multiple-use agency, BLM does not require projects to achieve a net conservation benefit. However, loss of resources or values does require mitigation. In general, the need for additional public land to be designated for conservation management could be considered in future RMP revisions, but is not appropriate for a project-level evaluation. No additional special management areas are proposed as part of this Project, and as such, development of management plans for special designation areas is beyond the scope of this project.

SI1ah See next page for response to SI1ah

SI1ai See response to Comment SI1a.

Comment(s)

Response(s) - continued

SI1

Audubon Rockies et. al (cont.)

SI1ad

The BLM is actively engaged with the Applicant and other relevant agencies to develop appropriate compensatory mitigation for resources for which land use plan goals and objectives or regulatory thresholds could not be met with onsite avoidance, minimization, and selective mitigation measures. The BLM has provided information regarding possible measures that could be used to compensate for the effects of the project on these resources. These measures are described in Appendix K (Sage-grouse Compliance), Appendix E (BLM Mitigation Guidance), and Section 3.2.9 (migratory birds) of the Final EIS.

As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS, and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

Comment(s)

Response(s) - continued

SI1 **Audubon Rockies et. al (cont.)**

In general, the need for additional public land to be designated for conservation management could be considered in future RMP revisions but is not appropriate for a project-level evaluation. No additional special management areas are proposed as part of this Project; and as such, development of management plans for special designation areas is beyond the scope of this Project. Impacts on WSA lands with wilderness characteristics are disclosed in Sections 3.2.14 and 4.3.14 of the Draft EIS and Sections 3.2.16 and 4.3.16 of the Final EIS. Development of management plans for non-WSA lands with wilderness characteristics is beyond the scope of this project.

SI1ah As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation), developed in coordination with cooperating agencies for the selected route.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ai management of Lands with Wilderness Characteristics, and withdraw from those lands all uses which are incompatible with the conservation objectives. The management plans for these areas must include comprehensive protections for the resources in question, including ROW exclusion, no surface minerals leasing, no off-road vehicle use, etc.

SI1aj
- To the degree that it is consistent with conservation needs for specific species and resources, acquisition, restoration, and long-term management of private lands to mitigate unavoidable impacts is another tool which should be used. If newly acquired or protected lands are to be held in non-federal ownership, conservation values must be given similar permanent protection through deed restrictions and easements, and funding must be secured for long-term management of these lands consistent with the mitigation strategy employed.[9]
- If consistent with conservation needs for specific species and resources, acquisition of private land to be placed within the federal estate and managed with comprehensive protections for the resources in question, and withdrawal from those lands all uses incompatible with the conservation objectives.

SI1ak
- Conservation opportunities across ownerships at landscape level scale should be pursued as mitigation where possible. We need to preserve the ability of species and habitats to adapt to a changing climate. Climate impacts are occurring now and have measurable impacts on the landscape. Consequently larger scale conservation efforts provide a useful hedge against expected impacts the extent to which cannot be precisely forecast today. Such approaches to mitigation are being employed in the State of California in the BLM and DOE California Desert Renewable Energy Conservation Plan (DRECP). They should be considered here as well.

While mitigation for impacts to biological resources is critical, it should not be limited to just those resources. The Agencies should address mitigation for impacts across the range of values and resources found on public lands, including but not limited to Lands with Wilderness Characteristics and Roadless Areas, visual resources, and opportunities for non-motorized recreation.

SI1al **Off-site mitigation should be required to take place in the same ecoregion as the project site, and as locally as possible wherever feasible.** The World Wildlife Fund defines an ecoregion as a "large unit of land or water containing a geographically distinct assemblage of species, natural communities, and environmental conditions."[10] Ecoregional health is critical for maintaining the health of individual ecosystems within the ecoregion. In addition to ensuring that off-site mitigation meets a "no net loss" requirement for resources and values lost on the project site and "net conservation" benefit for USFWS Threatened and Endangered species and BLM Special Status Species. The Agencies should require that mitigation take place in the same

---

[9] Where loss of habitat on public lands is "mitigated" by conservation easements on private lands, the easements should include some provision for public access or enhanced public access be provided in other nearby areas. Otherwise, the loss of hunting, fishing and wildlife opportunities will not be fully addressed. Wildlife behind a private fence and "No Trespassing" sign does not afford the same recreational value to individuals or the same economic value to local communities.

[10] See http://www.worldwildlife.org/science/ecoregions/delineation.html.

Response(s)

SI1aj As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation), developed in coordination with cooperating agencies for the selected route.

SI1ak See responses to Comment SI1n and SI1q.

SI1al See response to Comment SI1ag for issues related to management objectives and standards for resources analyzed in the EIS. Recommendations regarding the location of potential off-site mitigation are consistent with the BLM and U.S. Department of the Interior (USDI) mitigation policies and will be considered during development of any potential mitigation. Types of off-site mitigation being considered by the BLM are described in in Appendix K (Sage-grouse Compliance), Appendix E (BLM Mitigation Guidance), and Section 3.2.9 (migratory birds) of the Final EIS.

Comment(s)	Response(s)
SI1 **Audubon Rockies et. al (cont.)**	
SI1al ecoregion as the project site, to ensure the continued health of the overall ecoregion. In situations where availability of private lands for purchase and addition to the federal estate under conservation protection is limited, additional conservation designations on existing BLM land, as well restoration and other mitigation measures, will be necessary.	
SI1am As impacts from GWS will vary significantly across the 400-plus mile project distance, wherever possible the Agencies should require that off-site mitigation be implemented on a far more local scale than simply in the same ecoregion as the impact.	SI1am See response to Comment SI1n.
Mitigation is still an evolving discipline and land use tool. With that in mind, we offer the following guidance for the mitigation goals within the EIS. Mitigation should enhance long-term health and viability of the impacted populations through permanent protections and others that last at least throughout life of project.	
d. Habitat Equivalency Analysis	
We support Habitat Equivalency Analysis (HEA) methods that precisely define mitigation needed to offset both short and long-term project impacts and benefit affected populations while still maximizing landscape-scale conservation. As presented in our comments on the Gateway West DEIS, Sage-grouse Supplement, and FEIS (Attachment 1), actual species habitat use data is	
SI1an the appropriate basis for estimating Habitat Services, the currency of an HEA. Our previous recommendation for the Gateway West Habitat Services Metric (HSM) model was that the predictions of this heuristic, expert opinion-based model be checked against the scientifically rigorous USGS Wyoming Basin Ecoregional Assessment (WBEA) sage-grouse models (Hanser et al. 2011). These models, based on sage-grouse pellet counts taken from surveys across the ecoregion, tested a far more comprehensive set of predictors, including disturbance from transmission lines, and incorporated the spatial scale at which predictors were influential. The approach we recommend for GWS is based on project-specific modeling efforts, similar to the WBEA. We suggest that the GWS HEA focus on (1) defining the best model for the purposes of valuing habitat proposed for development (vs. habitat proposed for preservation or mitigation) and on (2) the effects of transmission lines and structures themselves. Restoration methods might also be included in the HEA on an experimental, adaptive management basis, but at this time there is insufficient understanding of their equivalency to habitat loss and degradation to allow full use in HEAs. We oppose the use of an opinion-based approach like that used for Gateway West to assess the impacts of development on sage-grouse, habitat services lost, and resulting mitigation needed for the species. We continue to believe this approach could lead to significant negative impacts on this already compromised species. ***Recommendation:*** The Agencies must adopt an HEA process that models actual sage grouse habitat use to identify the strongest habitat predictors. The attempt to define them a priori through an expert opinion process lacks sufficient biological realism and is inherently inaccurate. The HEA and all associated data should be available for public review prior to the release of the FEIS.	SI1an A technical working group (the Habitat Equivalency Analysis [HEA] Technical Working Group) that included sage-grouse biologists from the BLM, FWS, state wildlife agencies, and other cooperating agencies was convened by the Applicant and collaborated to provide input and guidance for developing the Applicant's HEA. The HEA provides a scientific-based, peer-reviewed method of scaling mitigation requirements and has been used by federal regulatory agencies, including the FWS and National Oceanic and Atmospheric Administration.
e. Avian Protection Plan (APP).	
17	

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ao

The DEIS references an Avian Protection Plan only once, Table 2-8, dated 2011. As with proponents of other high-voltage transmission lines, the proponent should be committed to developing an operational policy and a comprehensive strategy for collecting data, minimizing impacts, and mitigating loss of migratory birds and essential habitats prior to the initiation of construction. This policy and strategy should be incorporated into a single, over-arching, living document (Avian Protection Plan) that will include a full listing of all minimization measures included in this analysis, as well as recommendations from the USFWS and additional information included within the Avian Protection Plan Guidelines, developed by the USFWS and APLIC in 2005 (APLIC 2012). The APP should describe how the transmission tower design will reduce electrocution risks, prevent nesting, and prevent collisions with electrical wires and tower support wires. The GWS APP, given its date, should be updated. Doing so would enable adding line-specific risk assessments for nesting on structures along the chosen ROW and collision risk assessments. The APP should be continually evaluated and refined as monitoring data and new innovations, as well as ongoing information on avian impacts, become available. Given the breadth of avian impacts anticipated to occur with this line, including to sensitive species, the APP must be made available for public review and comment prior to the release of the FEIS. Ongoing impacts to avian species during construction and operation of the line must be provided to the public in a transparent manner, with members of the public given opportunities to participate in the ongoing development of the APP.

Recommendation: The APP must be made available for public review and comment prior to the release of the FEIS.

f. Reclamation.

Ensuring reclamation of disturbed habitat with native species will require a plan informed by the best available science as well as a rigorous inspection program to achieve goals and objectives in the short-, medium- and long-term.

SI1ap

In addition, the University of Wyoming's Wyoming Reclamation and Restoration Center (WRRC) is an interdisciplinary program housed within the College of Agriculture and Natural Resources and works closely with the School of Energy Resources. This entity contains local expertise and resources of value, which is invaluable given the challenges of restoring these disturbed ecosystems. The Wyoming BLM also has a reclamation website that contains various resources. In addition, the Wyoming Sage-grouse Implementation Task Force (SGIT) has recently convened a Reclamation Committee to address methods and prioritization of reclamation in Wyoming. The work pursued by the SGIT is expected to have regional applicability.

***Overall Recommendations on Mitigation*:** In the FEIS, the Agencies should include additional improvements for mitigation for GWS, including the entire mitigation hierarchy of avoiding, minimizing and off-setting impacts. The Agencies should use the tools provided in the BLM Draft Regional Mitigation Manual and the Presidential Memorandum on transmission siting, permitting and mitigation. The Agencies should also demonstrate how the approaches used for GWS are consistent with the BLM Draft Regional Mitigation Manual, Secretarial Order No. 3330 (see Section IV), and the Presidential Memorandum. In addition, clarification needs to be

18

SI1ao

APPs are utility-specific documents that delineate a program designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities. The Applicant for the Project is an existing, regulated public utility with an existing programmatic APP that would apply to the Project, if built. Programmatic APPs can be developed to establish utility-wide practices and are not intended to be developed for individual projects. The Applicant's APP is included in the Administrative Record and includes monitoring, reporting, and best management practices to reduce avian mortality.

Location-specific avian protection measures will be developed in collaboration with the agencies and be compatible with the Applicant's existing APP.

SI1ap

The Reclamation, Revegetation, and Monitoring Framework Plan that will be developed for the POD is described in Section 2.4 of the Final EIS. The Reclamation, Revegetation, and Monitoring Framework Plan would use the best available information about reclamation methods to meet the BLM and other agency objectives.

Information about actions that would be taken to avoid, minimize, and mitigate for the potential effects of the Project are described in Section 2.5.1 and in individual resource sections located in Chapter 3 of the EIS. Off-site mitigation being considered by the BLM and relevant regulations and policies are described in in Appendix K (Sage-grouse Compliance), Appendix E (BLM Mitigation Guidance), and Section 3.2.9 (migratory birds) of the Final EIS.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ap made on how mitigation documents being currently developed by the BLM and USFWS, in regards to Greater Sage-grouse, will be applied to this proposed project. We provide specific recommendations for mitigation measures in Appendices A-C on the routes.

V. Inventory Of and Protection For Lands with Wilderness Characteristics.

The Federal Land Policy and Management Act of 1976 (FLPMA) requires BLM to inventory and consider lands with wilderness characteristics during the land use planning process. 43 U.S.C. § 1711(a); see also Ore. Natural Desert Ass'n v. BLM, 531 F.3d 1114, 1119 (9th Cir. 2008). Instructional Memorandum (IM) 2011-154 and Manuals 6310 and 6320 contain mandatory guidance on implementing that requirement. The IM directs BLM to "conduct and maintain inventories regarding the presence or absence of wilderness characteristics, and to consider identified lands with wilderness characteristics in land use plans and when analyzing projects under [NEPA]."

BLM must update its inventory of lands with wilderness characteristics along the potential GWS routes and cannot simply rely on the underlying Resource Management Plans (RMPs) along the potential routes. See N. Plains Res. Council v. Surface Transp. Bd., No. 97-70037, slip op. at 24-32 (9th Cir. Dec. 29, 2011) (rejecting agency's reliance on "stale" inventory data). Manual 6310 identifies situations when BLM must update its inventory, which includes when: "BLM has new information concerning resource conditions, including public or citizens' wilderness proposals" and when a "project that may impact wilderness characteristics is undergoing NEPA analysis."

BLM should also protect lands with wilderness characteristics, including Citizens' Proposed Wilderness (CPW) areas, from development because of the important resources and values found there. CPW lands have been inventoried by various citizens groups, conservationists, and agencies and have been found to have "wilderness characteristics," including naturalness, solitude, and the opportunity for primitive recreation. Beyond these core values, these lands also provide important wildlife habitat, cultural and scientific resources, invaluable ecosystem services including clean air and water, important economic benefits, and many other resources and values. The sensitive nature of these lands and their resources and values makes transmission development inappropriate there. Potential impacts to specific LWC and CPW areas from GWS routes are addressed in Appendices A-C on the routes.

SI1aq We appreciate that some field offices updated their LWC inventories in response to the proposed TransWest Express and GWS transmission projects. However, in the Little Snake Field Office, the BLM is still in the process of conducting full field inventories of all the draft units – units adjacent to WSAs have not been inventoried in the field. In addition, the Rawlins Field Office recently released an updated draft inventory; the comment period closed on May 16, 2014, and organizations signed on to this letter submitted extensive comments on the need to conduct a more thorough and accurate inventory before making planning decisions. Given the recent closure of the comment period, conservation groups, the public, and other interested parties have not had sufficient time to for on-the-ground analysis of the BLM's inventory. Because of this fact, it is likely that scope and size of the units analyzed in this Draft EIS is inaccurate. BLM

19

Response(s)

SI1aq Inventories of non-WSA lands with wilderness characteristics units in the BLM Little Snake Field Office are complete. Units adjacent to WSAs were inventoried in 1979. Per Manual 6310, the BLM is not required to complete full field inventories for non-WSA lands with wilderness characteristics; rather, the BLM is required to visit the area and review what was originally inventoried for an area to determine if wilderness characteristics are present. The BLM Little Snake Field Office has reviewed the non-WSA lands with wilderness characteristics units adjacent to WSAs and determined the units do not have wilderness characteristics due to lack of solitude from the intrusion of man-made disturbances. As specified in Manual 6310, if an individual or group has information to be considered in the determination of wilderness characteristics, a written proposal describing additional wilderness characteristics must be must be submitted to the applicable BLM field office for review.

In the BLM Rawlins Field Office, all inventoried units crossed by a Project alternative route or route variation are included in the Final EIS (Section 3.2.16 and 4.3.16).

See also response to Comment SI1ah. As described in Section 2.5.1.2, after initial impacts were identified for each resource, selective mitigation measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation, to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

must consider and address new information on LWC inventories provided by stakeholders for the Rawlins and other field offices in the future prior to approving projects.

SI1aq ***Recommendations:*** Pursuant to FLPMA and IM 2011-154 and Manuals 6310 and 6320, BLM must update its inventory of lands with wilderness characteristics in areas potentially affected by the proposed GWS corridor. BLM should also protect lands with wilderness characteristics, including CPW areas, from development. If impacts cannot be avoided, then on and off-site mitigation should be required. Specific information on potential impacts to LWC from GWS corridors, as well as recommended mitigation measures, is included in Appendices A-C. BLM should address the inaccuracies in the Little Snake Field Office LWC inventory and the insufficiencies in the Rawlins LWC inventory already identified. Further, BLM must consider and address new information on LWC inventories provided by stakeholders for the Rawlins and other field offices in the future.

VI. Overlap With and Potential Use of West-wide Energy Corridors (WWEC)

Background on WWEC, lawsuit and settlement agreement:

Section 368 of the Energy Policy Act of 2005 requires the Secretaries of Agriculture, Commerce, Defense, Energy and Interior, in consultation with the Federal Energy Regulatory Commission (FERC), other governments, industries, and other interested parties, to designate energy corridors on federal lands. The agencies are required to complete any environmental reviews and incorporate the corridors into existing land use plans as part of the designation process. Section 368 also requires that the agencies establish procedures to ensure that additional corridors are designated promptly and to expedite applications for construction of pipelines and facilities within the designated corridors. As required, WWEC were first designated in the 11 Western States. A process to designate corridors in the remaining states has also commenced.

The original corridor designations did not focus on or facilitate access to renewable energy development. Further, because of failures to consider the actual impacts of the corridors and to engage the public and state and local governments, the currently-designated WWEC would adversely affect National Park Service areas, National Monuments, National Wildlife Refuges, habitat for threatened and endangered species, and proposed wilderness, among other special places and values, and miss opportunities to minimize impacts and designate preferable locations. For these reasons, a coalition of conservation organizations and a western Colorado county challenged the original WWEC designations in court.[1]

In June 2012, a landmark settlement was reached between federal agencies and the plaintiffs (Attachment 2). Through the settlement, the WWEC designations will be reevaluated and revised to better: avoid environmentally sensitive areas, diminish proliferation of dispersed right-of-ways

---

[1] Plaintiffs are: The Wilderness Society, BARK, Center for Biological Diversity, Defenders of Wildlife, Great Old Broads for Wilderness, Klamath-Siskiyou Wildlands Center, National Parks Conservation Association, National Trust for Historic Preservation, Natural Resources Defense Council, Oregon Natural Desert Association, Sierra Club, Southern Utah Wilderness Alliance, Western Resource Advocates, Western Watersheds Project, and County of San Miguel, Colorado.

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

(ROWs), and facilitate development of renewable energy projects. This will be accomplished through four key provisions:

1) The BLM, FS, and Department of Energy (DOE) have entered into a Memorandum of Understanding (MOU) that will guide the agencies' review of WWEC and mitigation measures (both for corridors already designated and any new corridors) through an interagency work group that will review corridors and mitigation measures, and provide their recommendations on needed revisions, deletions and additions (Settlement Agreement Section II.A.1).[11]
2) BLM, FS and DOE will follow specified corridor siting principles when reviewing WWEC and developing recommendations for revisions, deletions and additions, including evaluating areas that have a high concentration of corridors, considering access for renewable energy, and looking at options to avoid or reduce environmental impacts, with opportunities for stakeholder participation (Settlement Agreement Section II.A.1.c.).
3) BLM and FS will issue guidance on use and development of WWEC, including identifying "corridors of concern" and known conflicts in those corridors, as well as emphasizing the need for environmental analysis of any proposed projects in a corridor pursuant to the National Environmental Policy Act (NEPA) (Settlement Agreement Section II.A.2).[12] BLM will also correct its existing guidance, in Instruction Memorandum 2010-169, regarding siting and construction of electric transmission infrastructure in energy corridors to incorporate the direction from this settlement (Settlement Agreement, Section II.A.5).
4) BLM and FS will incorporate and increase emphasis on environmental considerations into agency training on processing applications to site pipelines and electrical transmission lines.

The BLM and other federal agencies have maintained their focus on these key provisions and continue to meet the benchmarks required by the settlement, including publication of the inter-agency MOU in July 2013 and initiation of the first review of the WWEC.

The WWEC and the GWS DEIS:

Potential routes for GWS overlap WWEC in several locations as shown on Map 2-1a and Map 2-1b. (DEIS pp. 2-55 to 2-56). Some areas of overlap include corridors identified as "Corridors of Concern" (COCs) in the settlement agreement, as described in the DEIS. (DEIS pp. 1-17 to 1-18; pp. 3-642 to 3-645).

Further, the agreement defines COCs as corridors "having specific environmental issues" and, where projects overlap with COCs, the agencies have committed to identify the specific resource

---

[11] Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/transmission.Par.54511.File.dat/S.%20368%20Settlement%20MOU_Signed07-08-2013.pdf

[12] BLM's new guidance was issued in Instruction Memorandum 2014-080, available at: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2014/IM_2014-080.html

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

conflicts and will also be providing notice that siting projects within these corridors will likely lead to heightened public interest and concern and may:

- Be challenged;
- Involve significant environmental impacts;
- Involve substantially increased or extensive mitigation measures such as off-site mitigation to compensate for impacts to sensitive resources;
- Include preparation of an environmental impact statement;
- Include consideration of alternatives outside the corridor and consideration of an alternative that denies the requested use; and
- Include amendment of the applicable land use plan to modify or delete the corridor of concern and designate an alternative corridor.

As described above, BLM has issued guidance for BLM line managers on addressing applications for projects in WWEC and COCs (BLM IM 2014-080). Where GWS routes overlap with COCs, the Agencies and the Proponent must take special care to set out the issues identified for the COCs in Exhibit A to the settlement agreement (Attachment 3). In some cases, alternative routes in COCs could be the lowest-impact routes analyzed in the DEIS in the region. For this reason, the fact that a route is in a COC should not eliminate an alternative route from consideration altogether, but it does require additional actions as defined in the settlement agreement, including consideration of how the values at risk will be affected and/or can be protected.

Specific issues relating to COCs and recommended mitigation measures to address those issues are included in Appendices A-C on the routes. We also recommend that the Agencies evaluate whether to delete or modify the corridor designations that are within COCs and consider possible new corridor designations to help access renewable energy as part of these RMP amendments.

SI1ar Finally, some of the alternative routes for GWS fall within WWEC which would be the lowest-impact routes under consideration in the region, yet BLM and the applicant are not proposing to use the WWEC. For example, segments W111 and C13 follow WWEC and are the lowest-impact routes under consideration in the region, but they are not the BLM's preferred alternative or the applicant's proposed route. Where the WWEC are the lowest-impact routes under consideration, BLM should make those routes the BLM-preferred routes.

***Recommendations*:** The Agencies should evaluate whether to delete or modify the corridor designations that are within COCs and consider possible new corridor designations to help access renewable energy as part of these RMP amendments. Where the WWEC are the lowest-impact routes under consideration, BLM should make those routes the BLM-preferred routes.

VII. Deficiencies in the GWS DEIS

a. The DEIS fails to adequately analyze impacts to climate change and conformance to the President's Climate Action Plan

22

SI1ar The analysis and documentation in the EIS have been updated to be consistent with BLM Washington Office Instruction Memorandum (WO-IM) No. 2014-080, Policy Guidance for Use of Corridors Designated Pursuant to Section 368 of the Energy Policy Act of 2005 as Required by the Settlement Agreement in Wilderness Society v. USDI, No. 3:09-cv-03048-JW (D. N.D. Cal), which was issued on April 10, 2014.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

The DEIS (S-2) states the following regarding BLM's purpose and need for preparing the document:

> "The agencies' purpose and need is further guided by the President's Climate Action Plan (President of the United States 2013), which is a broad-based plan to cut carbon pollution. Part of the plan focuses on expanding and modernizing the electric grid to promote clean energy sources. To this end, the agencies are charged with analyzing applications for utility and transportation systems on land they administer. When analyzing applications, the agencies also must consider the recommendations in the 2011 Western Electricity Coordinating Council 10-Year Regional Transmission Plan regarding future transmission needs."

SI1as

The DEIS fails to address how GWS would promote clean energy in a way that mitigates impacts of climate change on national level, let alone on a global scale. Along with the President's Climate Action Plan, NEPA requires that federal agencies "recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment."[13]

The DEIS failed to follow both NEPA and the President's Climate Action Plan by omitting an analysis of the type of energy generating resources that would benefit from the proposed line. Absent this essential analysis, neither the BLM nor the public have a clear idea of whether new renewable resources or existing fossil fuel generation will utilize the line. The DEIS must make some effort to assess how the line will be utilized. Rather than engage in the rigorous analysis required by NEPA, the DEIS evaded this critical issue with the following language: "The GHG emissions are regulated under federal requirements that include mandatory reporting and GHG emission permits for major sources. It is not expected that the types of sources that will be part of the Project would be subject to these Rules."[14] With this conclusory statement, the DEIS ignored the very real fact that PacifiCorp could interconnect its major fossil fuel generating stations to the Gateway Project.

Recommendation: The DEIS should follow both NEPA and the President's Climate Action Plan by including an analysis of the type of energy generating resources that would benefit from the proposed line.

b. BLM must consider, disclose and analyze significant new information in the DEIS in order to demonstrate Purpose and Need

---

[13] 42 U.S.C. § 4332(f).

[14] BLM. (2014) Chapter 3 Affected Environment and Environmental Consequence. Page 8.

23

Response(s)

SI1as

It is not BLM's role or responsibility to verify the applicant's interests and objectives for a proposed project. As a regulated utility, the need for transmission projects proposed by PacifiCorp is scrutinized by the Public Utilities Commission. The responsibility of BLM and other land-management agencies is to respond the application for right-of-way across lands it administers.

Regarding the scope of analysis presented in the EIS, it is beyond the scope of existing science to relate a specific source of GHG with the creation (or mitigation) of any specific climate-related environmental effects. Further, since the specific effects of a particular action, which may contribute to or mitigate against climate change, cannot be determined, it is also not possible to determine whether any of these particular actions will lead to significant climate-related environmental effects. Finally, there are still not regulatory standards for climate change. Thus, the BLM believes the analysis in the EIS represents the best available science as required by the CEQ guidelines.

With climate change, increased peak demands for electricity for air conditioning will deplete electrical generation and distribution capacities. The Environmental Protection Agency (EPA) projects that climate change could increase the need for additional electric generating capacity by 10 to 20 percent by 2050. Conversely, the demand for natural gas, oil, and wood for heating will decrease. Electricity supply will also be affected by increased year-to-year variability of precipitation that is expected (U.S. Global Change Research Program 2012; EPA 2014). Fossil fuel and nuclear power plants that use water for cooling will have reduced efficiencies with higher air and water temperatures. (Tidwell et al. 2013)

Higher temperatures will also negatively impact the capacity of transmission lines and transformers. Transmission lines incur incremental power losses as the temperatures of conductors increase. Low wind speeds on extremely hot days may result in conductor temperatures that can permanently damage transmission lines. Higher ambient temperatures also reduce the peak-load capacity of transformers and increase the risk of catastrophic failure. Transmission systems will be at increased risk of loss or damage due to wildfires. The Project will contribute to a part of the President's Climate Action Plan (President of the United States 2013), which focuses on expanding and modernizing the electric grid to meet these challenges.

The time required to add significant transmission infrastructure is often longer than adding generation resources or securing third-party resources. Transmission additions must be integrated into regional plans and then permits must be obtained to site and construct the physical assets. Inadequate transmission capacity limits the ability to access what would otherwise be cost-effective generating resources, including renewables. As a result, the specific generation resources that would connect with the proposed transmission line are not known at this time and their GHG and impacts, therefore, cannot be quantified.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1at

The DEIS cites important data from PacifiCorp's 2011 Integrated Resource Plan (IRP),[15] even despite PacifiCorp's 2013 IRP[16] significantly altering the data that BLM is basing its analysis and decision-making on. Beyond the fact that the 2011 IRP is outdated and BLM obviously is aware of significant new information yet isn't utilizing it or disclosing it to the public, the use of old data compromises the entire DEIS's analysis by placing the purpose and need it question.

Specifically, the DEIS has failed to include and incorporate the information form the 2013 IRP where PacifiCorp lowered many of the same growth forecasts and peak load needs cited in the DEIS. The difference in Forecasted Annual System Coincident Peak in 2023 is approximately 1,800 MW (13,000 MW - 11,200 MW = 1,800 MW). This is significant because the Gateway South Project is projected to carry 1,500 MW of capacity, and the difference between the load forecast vintages exceeds the carrying capacity of the proposed line.[17] PacifiCorp's updated data calls into question the actual need for the proposed project. In order to comply with NEPA, BLM must revise the EIS to reflect the most recent information on growth forecasts.

The DEIS's description of PacifiCorp's energy usage growth and resource needs is also outdated and must be revised accordingly. According to the DEIS, energy usage growth will be 2.3 percent per year for the next five years and 2 percent each year over the next ten years.[18] This information is based on the 2011 IRP and does not reflect the Company's current forecast.[19,20] The 2013 IRP projects a peak load growth compound annual growth rate of 1.2 percent from 2013-2022. Energy growth in the 2013 IRP is at an annual average growth rate of 1.08 percent for 2013-2022, well below the 2 percent noted in the DEIS.[21] The annual average growth rate for the five years (2013-2017) is 0.68 percent, well below the 2.3 percent for the next five years cited in the DEIS. BLM's energy growth rates for PacifiCorp should be updated to be consistent with PacifiCorp 2013 IRP values.

Recommendation: DEIS's description of PacifiCorp's energy usage growth and resource needs is also outdated and must be revised accordingly.

c. Challenges to Evaluate Wildlife Impacts as Presented in DEIS

SI1au

The DEIS presents wildlife impacts, including to special status wildlife, by alternative route (see Table 3-110 in DEIS as example) rather than segments. This level of information aggregates impacts at too coarse of a spatial scale to allow reviewers to understand and evaluate the level of impact across the individual segments. It is unrealistic to expect that one of the alternatives, as a whole, presented in the DEIS will ultimately be selected for the transmission route. Given this,

---

[15] US Department of Interior Bureau of Land Management. Draft Environmental Impact Statement and Land-use Plan Amendments for the Energy Gateway South Transmission Project. BLM/WY/PL-14/009+5101, Case File: WYW-174597. Volume1-A. February 2014.

[16] PacifiCorp. 2013 PacifiCorp Integrated Resource Plan Volume 1. March 30, 2013. Available at http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/PacifiCorp-2013IRP_Vol1-Main_4-30-13.pdf.

[17] BLM. (2014). Page S-3.

[18] BLM. (2014). Page S-3.

[19] PacifiCorp. 2011 Integrated Resource Plan Volume 2. March 31, 2011. Table A.9. Page 11.

[20] Table A.9 indicates that the 2011-2020 average annual growth rate is 2.1 percent. The average annual growth rate for the five years 2011-2015 is 2.4 percent. These values are slightly different that the growth rates reported in the DEIS.

[21] PacifiCorp. 2013. Appendix A. Page 30.

Response(s)

SI1at

It is not BLM's role or responsibility to verify the applicant's interests and objectives for a proposed project. As a regulated utility, the need for transmission projects proposed by PacifiCorp is scrutinized by the Public Utilities Commission. The responsibility of BLM and other land-management agencies is to respond the application for right-of-way across lands it administers. The most readily available information was used during development of the Draft EIS. The BLM understands that PacifiCorp prepares its Integrated Resource Plan (IRP) on a biennial schedule, filing its plan with state utility commissions during each odd numbered year. For even-numbered years, PacifiCorp updates its preferred resource portfolio and action plan by considering the most recent resource cost, load forecast, regulatory, and market information. Updates to the IRP are available to the public at http://www.pacificorp.com/es/irp.html. Based on the current schedule for the Final EIS, the 2013 IRP Update is the most current information. Appendix A of the Final EIS has been updated to reflect the 2013 IRP Update. BLM understands from PacifiCorp that preparation of the 2015 IRP Update is currently underway and will be available in March 2015.

SI1au

Section 2.5.1.3 and Figure 2-7 of the Final EIS presents the systematic and progressive analysis for screening and comparing local areas (Level 1 analysis) then subregional areas (Level 2 analysis) that was conducted to narrow the number of alternative routes and route variations and determine the most environmentally acceptable alternative routes and route variations to be addressed in the EIS. That is, for each level, once the impacts along each of the areas (local/sublocal/regional) of alternative routes and route variations had been analyzed, the areas of alternative routes were screened and compared to identify which were most environmentally preferable and to eliminate from further consideration less preferable ones (in accordance with criteria at 40 CFR 1502.14). The Level 1 and 2 analysis results are recorded in the Project record. Routes considered and eliminated from detailed analysis through the Level 1 and Level 2 screening and analysis are described in Section 2.6.2 in the EIS. The Level 3 analysis involved combining the suitable segments of routes from the first two levels of screening to form complete routes. The Level 3 analysis is presented in the EIS. The commenter is referred to Tables S-1a through S-1d in the EIS that provide a detailed comparative analysis (Level 3) of the resources for each alternative route and route variation considered in detail in the EIS. The tables identify key resource inventories and associated impacts for each resource based on the analysis presented in Chapter 3. Further, the commenter is referred to the Map Volume (Volume II) that accompanies the EIS. The map volume contains one map showing the seven construction access levels that predict (1) the general type of access required for each mile of alternative route and (2) the associated disturbance and 23 maps showing resource inventory and impacts. The inventory and impacts are reported by link. Finally, because of this systematic and progressive analysis, the Agency Preferred Alternative identified for the northern Project area (from Aeolus Substation, Wyoming, to near U.S. Highway 40 at the Colorado-Utah border) and southern Project Area (from the Colorado-Utah border to the Clover Substation, Utah) in the EIS does indeed reflect the agencies' preference for consideration by the agency decision-makers when selecting and approving a route.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1au the manner in which wildlife impacts are presented in the DEIS limits the ability of reviewers to provide feedback or guidance on unique routing combinations, severely limiting the ability of the public to understand the impacts and engage in the NEPA process. This information was presented for selected segments, specifically the alternative connectors, and should be provided for all the segments. This can be accomplished through GIS analyses of data already compiled for the DEIS and would allow for much better analysis of route alternatives. In addition, this lack of information limited our collective ability to identify site-specific opportunities for mitigation. Our organizations strongly encourage this information be made available in the FEIS, especially as current GIS technology makes this analyses possible. Too many uncertainties remain about *segment specific impacts*, including but not limited to:

- Waterfowl habitat (acres) construction/operation
- Number of raptor nest within 1 mile of the reference line
- Impacted potential black-footed ferret habitat (acres) construction/operation
- Impacted greater sage-grouse habitat (acres) construction/operation
- Number of occupied leks within 4 and 11 miles of reference line
- Number of special status raptor nests within 1 mile of reference line
- Big game crucial winter ranges and habitat types
- Acreage of Bird Habitat Conservation Areas crossed by the Alternatives

Recommendation: Wildlife impacts should be broken down by segments to enable reviewers to understand and evaluate the level of impact across individual segments.

d. Inadequate Analyses of Conservation Easements

SI1av Conservation easements are being increasingly utilized as a tool for the permanent conservation of private lands in the United States, especially valuable in keeping landscapes intact and habitat unfragmented. In a recent article by Copeland et al. 2013[22], the authors note:

> Conservation easements, legal agreements with landowners to restrict development rights on their lands in exchange for tax incentives or cash or both, have become a primary protection tool used by governmental agencies and land trusts globally, though especially in the United States, to achieve conservation goals and permanently restrict development and fragmentation on private lands [15,16]. Easements have been shown to reduce development and favor wildlife use in sagebrush ecosystems [17]. Easements are also expected to be effective for sage-grouse conservation on private lands.

However, conservation easements were inadequately addressed within the DEIS. The lack of consideration of these legal agreements and their location in relation to the proposed alternatives limits the ability of reviewers to evaluate the impacts associated with developing particular segments. The challenges presented by the Tuttle Ranch Conservation Easement in Colorado are illustrative of the issue. Even though localized options are outlined in the DEIS, the document

---

[22] Copeland H.E., A. Pocewicz, D.E. Naugle, T. Griffiths, D. Keinath, J. Evans, J. Platt. 2013. Measuring the Effectiveness of Conservation: A Novel Framework to Quantify the Benefits of Sage-Grouse Conservation Policy and Easements in Wyoming. PLoS ONE 8(6): e67261. doi:10.1371/journal.pone.0067261

25

Response(s)

SI1av Comment noted. Conservation easement information was collected from multiple sources for this Project, including state and local agencies. In reviewing the website referenced in your comment, the area for the Sand Wash/Sinkdraw conservation easement was larger so the boundary was updated for the EIS. In addition, two additional conservation easements in Sanpete County, Utah were added to the EIS analysis based on a comment received by the State of Utah. Any conservation easements in the Project study corridor are addressed by Project alternative route and route variation in Section 3.2.15.

Comment(s)	Response(s)
SI1 **Audubon Rockies et. al (cont.)**	
SI1av fails to fully address the impacts to the landscape – including the nearby substantial easement being pursued by NRCS and the Colorado Cattlemen's Association. Independent review by one of our organizations, using the National Conservation Easement Database, identified unreported conservation easements which overlap proposed routes. This information, in addition to outreach to major entities involved in conservation easements, should be included in the FEIS analyses for impacts by individual segments. From the public's perspective, this failure reduces the ability to minimize impacts and the upfront opportunity to identify site-specific mitigation locations. Failure to identify conservation easements raises concerns about not only conservation impacts, but also delays, increased costs and complications for this transmission route, as unknown conservation easements are identified later in permitting process. ***Recommendation:*** The Agencies should make every effort to identify existing and proposed conservation easements which might fall within the transmission corridor, including outreach to major entities involved in recruitment and management of conservation easements. This information, summarized by segment number, should be included in the FEIS.	
VIII. Greater Sage-Grouse Resource Management Plan Amendments The Northwest Colorado Greater Sage-Grouse Draft Land Use Plan and Environmental Impact Statement (NW CO GRSG RMP) was recently released for public review, with Wyoming and Utah plans slated for release in September/October. The draft considers four possible management alternatives for maintaining and increasing habitat for Greater Sage-Grouse on BLM and Routt National Forest lands in northwestern Colorado, which encompasses substantial portions of the alternatives in region 1. The proposed 400-mile GWS project would cross through a substantial amount of key sage-grouse habitat, including Moffat County, Colorado, which is home to over two-thirds of Colorado's Greater Sage-Grouse population. Other key sage-grouse populations in southwestern Wyoming and the Uinta Basin of Utah are also expected to be affected if the project is built.	
SI1aw Given the importance of sage-grouse conservation, BLM should heavily weigh sage grouse conservation in determining the preferred route. While we understand the BLM's goals are to be consistent with or complementary to other management actions whenever possible, our organizations want thoughtful planning that will ensure that impacts to grouse are avoided to the greatest extent possible and where this cannot be done, minimized through inclusion of scientifically sound decision-making and meaningful public input.	SI1aw See response to Comment SI1j.
SI1ax Review of the NW CO GRSG Draft RMP identifies all three action alternatives as having different approaches to ROW management. *Alternative C* (Conservation Groups) has all designated habitat (Preliminary Priority Habitat – PPH, Preliminary General Habitat – PGH, and Linkage/Connectivity Habitat) as exclusion areas for new BLM ROWs. *Alternative B* (National Technical Team Measures) and the *Alternative D* (Colorado Sub-regional/BLM Preferred) both only manage ROWs in regards to PPH. Alternative B has PPHs managed as exclusion areas and Alternative D has them managed as avoidance areas. However, Alternative D specifies that ROWs would be allowed in PPH *if* they don't adversely affect GRSG. Alternative D is also the only alternative that specifically addresses large transmission lines (greater than 230 kilovolts), which *brings into question whether the BLM has presented a reasonable range of alternatives*	SI1ax The BLM is not required to evaluate potential restrictions contained in the alternatives considered in the federal sage-grouse manangement planning process in the EIS for the Project. The analysis contained in the Final EIS for the Project is based on BLM and other cooperating agency policies and plans pertaining to sage-grouse management that are in effect at the time the analysis was prepared. If an action alternative is selected, the BLM's decision on the Project would comply with all relevant sage-grouse stipulations in applicable BLM RMPs at the time the decision is issued.

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

and the appearance of pre-decisional information in habitat that is of critical importance to the long-term management of GRSG. For large transmission lines, such as GWS, Alternative D (see figure 2-8, page B-14 in NW CO GRSG Draft RMP) has PPH as exclusion areas except for the 68,000 acres managed as an avoidance area. This avoidance area follows the same approximate route identified as the BLM and applicant-preferred alternative for GWS.

SI1ax **_Recommendations:_** Although these federal processes are moving separately, they need to be aligned such that they are using current and accurate science, and incorporate a meaningful range of alternatives that can be consistently applied across the two processes. We would also note that, as with the Colorado example provided above, other affected states have state-specific approaches to managing sage-grouse, which will also address the lands addressed by the GWS EIS, so similar analyses will be required for other route segments. Further, the public should have an opportunity to review and comment on those elements before final decisions are made.

IX. Concerns and Opportunities Regarding Greater Sage-Grouse and GWS

a. Sage-Grouse and Impacts Associated with Transmission Lines

In a 2009 report prepared for the Department of Energy[23], titled "Sage-Grouse and Wind Energy: Biology, Habits, and Potential Effects from Development," the authors summarized that "Braun et al. (2002) reported that sage-grouse were particularly susceptible to the placement of overhead power lines at within 0.8 km (0.5 mi) of nesting grounds. Significant impacts to sage-grouse have been documented from overhead power transmission and communication distribution lines out to 6 km (3.7 mi) (Manville 2004)."

The USFWS 2010 Finding[24] also identified power lines as directly affecting Greater Sage-grouse "by posing a collision and electrocution hazard" (Braun 1998, pp. 145-146; Connelly *et al*. 2000a, p. 974), having indirect effects by decreasing lek recruitment (Braun *et al*. 2002, p. 10), increasing predation (Connelly *et al*. 2004, p. 13-12), fragmenting habitat (Braun 1998, p. 146), and facilitating the invasion of exotic annual plants (Knick *et al*. 2003, p. 612; Connelly *et al*. 2004, p. 7-25) (page 18). Additionally, sage-grouse could be impacted through a direct loss of habitat and human activity (especially during construction periods) (USFWS 2010 at 44). The recently released Gateway West FEIS noted that recent research identified the best predictors between extirpated and occupied ranges to include distance to transmission lines (Wisdom et al 2011). FEIS at 3.11-74. Knick et al. 2013 further emphasizes intolerance of grouse to human disturbance and development, reporting that 99% of active leks in the species' western range were in landscapes with <3% disturbance.

---

[23] Becker J.M., J.D. Tagestad, C.A. Duberstein, J.L. Downs. 2009. Sage-Grouse and Wind Energy: Biology, Habits, and Potential Effects from Development. U.S. Department of Energy – PNNL 18567. Contract: DE-AC05-76RL01830. 35 pp. http://www.pnl.gov/main/publications/external/technical_reports/pnnl-18567.pdf

[24] US Fish and Wildlife Service 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. 2010. 50 CFR Part 17, FWS-R6-ES-2010-0018, MO 92210-0-0008-B2]. http://www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf

Comment(s)

SI1 Audubon Rockies et. al (cont.)

Earlier this year, the U.S. Geological Survey in cooperation with the BLM, released "Summary of Science, Activities, Programs, and Policies the Influence the Rangewide Conservation of Greater Sage-Grouse (Centrocercus urophasianus): Open-File Report 2013-1098" [25]. This report notes that transmission lines and local distribution lines are widespread throughout the range of sage-grouse and are especially prevalent in MZ II and in priority habitats in portions of MZs III and IV. This proposed high voltage transmission line will be an additional disturbance on the landscape, with its placement determining level of impacts to this imperiled species.

SI1ay

Recent range-wide breeding density analysis performed for the BLM stresses the importance of specific areas to sage-grouse, and thus conservation prioritization. Specific portions of GWS routes fall within areas that contain the top 25 percent of the breeding population within Management Zones II (WY, CO, UT) and III (UT)[26].

The USFWS 2010 Findings state, "Southwestern and central Wyoming and northwestern Colorado in MZ II has been considered a stronghold for sage-grouse with some of the highest estimated densities of males anywhere in the remaining range of the species (Connelly *et al*. 2004, pp. 6-62, A5-23). Wisdom *et al*. (in press, p. 23) identified this high-density sagebrush area as one of the highest priorities for conservation consideration as it comprises one of two remaining areas of contiguous range essential for the long-term persistence of the species" (page 35) [27].

Therefore, we remain concerned that the GWS transmission line *will* cause significant adverse impacts to Greater Sage-Grouse (GRSG) if improperly sited. Priority habitats should be identified and protected with adequate stipulations. Leks, nearby nesting and brood-rearing habitats, and winter habitat should be avoided. Locations for appropriate mitigation should be identified using the latest in spatial tools, and monitoring enforced to determine effectiveness. Our organizations recognize that careful planning and siting for GWS will not only benefit directly impacted populations of grouse but also be helpful in minimizing impacts from other proposed high voltage transmission lines.

b. Series Compensation Stations

SI1az

The DEIS notes that activities related to the construction and maintenance of compensation stations could result in loss or alteration of sage-grouse general habitat (DEIS p.3-576). However, the DEIS fails to provide information (i.e. map) of general areas where these might be

---

[25] Manier, D.J., Wood, D.J.A., Bowen, Z.H., Donovan, R.M., Holloran, M.J., Juliusson, L.M., Mayne, K.S., Oyler-McCance, S.J., Quamen, F.R., Saher, D.J., and Titolo, A.J., 2013, Summary of science, activities, programs, and policies that influence the rangewide conservation of Greater Sage-Grouse (*Centrocercus urophasianus*): U.S. Geological Survey Open-File Report 2013–1098, 170 p., http://pubs.usgs.gov/of/2013/1098/

[26] Doherty K.E., J.D. Tack, J.S. Evans, and D.E. Naugle. 2010. Breeding densities of greater sage-grouse: A tool for range-wide conservation planning. BLM Completion Report: Interagency Agreement # L10PG00911. http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs.Par.46599.File.tmp/GRSG%20Rangewide%20Breeding%20Density.pdf

[27] US Fish and Wildlife Service 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. 2010. 50 CFR Part 17, FWS-R6-ES-2010-0018, MO 92210-0-0008-B2]. http://www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf

28

Response(s)

SI1ay

The BLM acknowledges the importance of considering breeding density of sage-grouse when siting transmission lines. The BLM conducted an analysis of the breeding density of sage-grouse at leks within 4 miles of the proposed alternative routes and route variations. This analysis is presented in Section 3.2.8.5.4 of the EIS.

The BLM conducted the analysis of potential effects on sage-grouse using the best available information, including information regarding the location of priority habitats. The analysis has been revised to incorporate additional information regarding winter and brood-rearing habitats, where available. Under all alternative routes and route variations, design features and site-specific selective mitigation measures would be used to reduce the effects of the Project on sage-grouse. These measures are described in Section 3.2.8.4.3 and Table 3-102 of the Final EIS.

As described in Section 3.2.8.4.3, preconstruction surveys would be conducted to refine the application of selective mitigation measures and to establish monitoring requirements, which would be included in the POD.

SI1az

As identified in Appendix B, Section 2.6, locations for the stations have not yet been identified. The stations will be located approximately one-third (Series Compensation Station No. 1) and two-thirds (Series Compensation Station No. 2) of the distance from the Aeolus Substation to the Clover Substation. Series compensation siting areas identified by the Applicant are identified on map set MV-12 and were considered in the analysis referenced in this comment.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1az located. Lack of information precludes the ability to provide substantive comments. This is concerning given, "[c]onstruction of the series compensation station within sage-grouse habitat could affect sage-grouse habitat use and behavior due to the effects of noise and human presence associated with construction and operation of the series compensation site. Additionally, fences constructed around the series compensation station could provide perching structures for avian predators and could increase in predation pressure on sage-grouse using habitats adjacent to the series compensation station." DEIS p. 3-576.

c. More In-Depth Review of Actual Habitat, Population Trends, and GRSG Impacts

SI1ba The DEIS does provide description of the various grouse populations that are crossed by the line, it lacks a complementary map that illustrates their location to the segments of the route. This latter part should be included in the FEIS. The DEIS has little or no discussion of actual habitat and population conditions and trends in the Core/Priority/PPH Habitats identified as being overlapped by the Project Area, of which we know is available in Wyoming at the very least. BLM needs to incorporate and analyze additional site-specific information for each individual core area, based on a search of existing state data and scientific research. The discussion should include (1) a quantitative discussion of the most recent survey data regarding leks and bird numbers, (2) a qualitative discussion of the resource values and current condition of these priority habitats - including trends, threats, and direct, indirect and cumulative impacts and (3) other issues and special resource values in the priority habitats relevant to the impacts anticipated with construction and operation of this high voltage transmission line - including migration corridors, connectivity, breeding density, special habitat types such as brood-rearing or winter habitat, and existing disturbance levels and percentage. These analyses will reflect the best current scientific information, and the fact that all core areas may not be "created equal" with regard to habitat quality and importance to conservation and recovery efforts.

SI1bb In addition, as noted in a previous section, the DEIS presents GRSG impacts by alternative route rather than segments (see Table 3-104 as example). This level of information aggregates impacts at too coarse of a spatial scale to allow reviewers to understand and evaluate the level of impact across the individual segments. It is unrealistic to expect that one of the alternatives, as a whole, presented in the DEIS will ultimately be selected for the transmission route. Given this, the manner in which wildlife impacts are presented in the DEIS minimizes the ability of reviewers to provide feedback or guidance on unique routing combinations, reducing the value of public engagement. This information was presented in a limited fashion for selected segments, specifically the alternative connectors, but should be provided for all the segments. This can be accomplished through GIS analyses of data already compiled for the DEIS and would provide more defensible justification for selected route segments.

d. Sage-Grouse Mitigation Measures Proposed in DEIS

i. General Review of Proposed Mitigation Measures

The DEIS proposes implementation of various measures to identify sensitive areas to GRSG (e.g. leks, nesting habitat, wintering habitat, etc.) and implement seasonal timing restrictions and

29

Response(s)

SI1ba The methods used to identify and analyze potential effects on greater sage-grouse meet BLM and cooperating agency requirements for sage-grouse impact analysis and are consistent with the Framework for Sage-grouse Impacts Analysis for the Project (Final EIS, Appendix K). Impacts on sage-grouse were evaluated for (1) core areas or priority habitat, (2) general habitat and transmission line corridors designated in Wyoming Executive Order 2011-5, (3) habitat within 4 miles of leks in core areas or priority habitat, (4) habitat within 4 miles of leks outside core areas or priority habitat, (5) the numbers of sage-grouse leks within 2, 4, and 11 miles of each alternative route and route variation, and (6) the percentage of each state's estimated sage-grouse population that attend leks located within 4 miles of each alternative route and route variation. The same methods used to conduct these analyses on a statewide basis were used to analyze impacts on sage-grouse and sage-grouse habitat in the seven geographically separate sage-grouse populations crossed by the alternative routes and route variations in Utah. Sage-grouse habitat in northwestern Colorado and south-central Wyoming is contiguous and distinct population boundaries are not recognized by the BLM or state wildlife agencies. Therefore, additional individual population-level analyses beyond the statewide analyses described previously were not warranted in Colorado and Wyoming.

Descriptions and maps of population areas in each state are provided in Section 3.2.8.5.4 and include numbers of known occupied leks, population trends, and existing direct and indirect impacts on populations and habitats.

SI1bb See response to Comment SI1a.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

protection buffers in accordance with various Instructional Memorandums, Executive Orders, and existing Resource Management Plans (RMP). Adherence to these regulations and guidelines is being presumed to reduce impacts to GRSG. However, there are fundamental flaws with this rational and challenges for stakeholders to have assurances of meaningful protection for grouse. Specifically, (1) these RMPs are often dated and founded on inaccurate/inadequate protections, (2) field offices present an inconsistently wide range of protective measures, (3) these protections are primarily limited to construction only, (4) not all aspects of GRSG biology or habitat needs are adequately addressed, (5) monitoring and enforcement are poorly addressed, (6) off-site mitigation is inadequately considered, and (7) areas serving as refugia, such as unfragmented landscapes, are not identified for stronger protections. Some of these concerns are addressed in further detail below.

ii. Protective Stipulations

Surface disturbance is anticipated to have adverse impacts to sagebrush habitats including temporary and permanent loss of habitats across all alternatives. Fragmentation and degradation of habitat for GRSG also is anticipated from surface-disturbing activities and associated development. Therefore, protective stipulations within the project area deserve careful attention.

SI1bc

The DEIS relies heavily on BLM field office stipulations (Table E-11), which highlights *the inconsistent and inadequate wildlife protections across the field office planning areas*. The FEIS should include a table which identifies the RMPs that are relevant to this Project, as was done for TWE.

In addition, the protections afforded to GRSG are predominantly founded in inaccurate/inadequate protections. Collectively, our organizations continue to stress that that science strongly argues that the *spatial restrictions (no surface use and controlled surface use restrictions) proposed in the DEIS are severely inadequate*. The 0.25 mile and 0.60 restrictions around the perimeter of occupied leks, as noted in Table E-11, have long been recognized as being without scientific merit and an inadequate protective measure to maintain lek activity (Holloran 2005, Walker et al. 2007). Instead, given the research from oil and gas development, the agency should *avoid placing transmission lines within 5 miles of sage-grouse leks, which is also recommended by the USFW* [28]. The Lander RMP DEIS and FEIS both recognized this, as did the Miles City RMP. As noted in the latter, "BLM NSO stipulations for leasing and development within 0.25 miles of a lek would result in an estimated lek persistence (the ability of leks to remain on the landscape) of approximately 5 percent, while lek persistence in areas without oil and gas development would be expected to average approximately 85 percent. Impacts from energy development occur at distances between 3 and 4 miles." …. "Impacts to leks caused by energy development would be most severe near the lek. Although most of the

---

[28] Prairie grouse leks and wind turbines: U.S. Fish and Wildlife Service justification for a 5-mile buffer from leks; additional grassland songbird recommendations. Manville, A.M., II (2004). Division of Migratory Bird Management, USFWS, Arlington, VA, peer-reviewed briefing paper. http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/prairie%20grouse%20lek%205%20mile%20public.pdf

30

Response(s)

SI1bc

A list of the relevant BLM RMPs is provided in Section 3.2.8.1.1.

The BLM acknowledges the importance of considering distance from leks and breeding density of sage-grouse when siting transmission lines. The BLM conducted an analysis of the distances between sage-grouse leks and the alternative routes and route variations and the breeding density of sage-grouse at leks within 4 miles of the alternative routes and route variations. This analysis is presented in Section 3.2.8.5.4 of the EIS.

The BLM conducted the analysis of potential effects on sage-grouse using the best available information, including information regarding impacts on leks. Direct and indirect effects on greater sage-grouse are described in Section 3.2.8.4.3 and are summarized in Tables 3-98 and 3-99. The Draft EIS concludes that residual impacts on sage-grouse would be high in priority habitats and within 4 miles of active leks and further discloses that impacts on sage-grouse could extend beyond the 4-mile lek buffer used for analysis (Refer to Section 3.2.8.5.4).

Under all alternative routes and route variations, design features and site-specific selective mitigation measures would be used to reduce the effects of the Project on sage-grouse. These measures are described in Section 3.2.8.4.3 and Table 3-102 of the Final EIS.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1bc impacts from energy development are indirect, some direct effects, such as flying into overhead power lines would also result from energy development and ROWs. Miles City DEIS/RMP at 4-135.

SI1bd Furthermore, the timing restrictions in the DEIS are also widely varying and could well pose a serious threat to nesting hens or those with foraging young. While there should be flexibility to incorporate local characteristics to fine-tune the window of protection (such as the addition of language, there should be a relatively consistent window of protections afforded to nesting and early brood rearing habitat. For example, in Wyoming, peak hatch generally occurs in early June and is followed by early brood rearing. Therefore, we strongly suggest that protections be extended until at least July 15 to be meaningful and maintain healthy future populations.

SI1be Our review of the DEIS identified Selective Mitigation Measures #6 and #14 which attempts to limit impacts by avian predation through tubular tower designs and anti-perching devices, respectively, as the only mitigation measure for focused on reducing impacts to GRSG during the operation phase of the proposed Project (DEIS pages 3-444 and 3-445). The remaining *protective stipulations apply primarily to the development-specific time-frame. Instead, we urge that protections be extended into the operations and maintenance periods*. Lander RMP FEIS notes that "wildlife seasonal protections from surface-disturbing and disruptive activities apply to maintenance and operations actions when the activity is determined to be detrimental to wildlife." FEIS at 117. This is an important timing due to the longer period of time associated with maintenance and operations actions, beyond the usual development-specific stipulations. BLM supports this in the Lander RMP FEIS, "Beyond initial exploration (including geophysical activities), land clearing, and aboveground facility construction, continued human disturbance to special status wildlife could occur from activities such as equipment maintenance and site operations, which are especially disruptive during sensitive times (wintering, breeding, and nesting)." FEIS at 931. The Miles City Draft RMP noted that in areas where development occurred, "there would be no restrictions to operation and maintenance activities, *which would potentially result in the reduction or extirpation of populations*." DEIS at 4-134 (emphasis added).

SI1bf The current protections proposed for adoption includes NSO stipulations as a means of protection for grouse. However, *NSOs are subject to exceptions, waivers and modifications*. If these can be applied to NSOs , this *fails to meet the regulatory certainty being sought by USFWS*, which is extremely concerning given the importance of this habitat to grouse persistence in the planning area. If waivers, exemptions and modification are allowed then the BLM should set up a process that allows the public to comment when these actions are considered.

iii. Noise

SI1bg The GWS DEIS fails to adequately address *noise* impacts. While the DEIS states that Executive Order protections are to be incorporated, it is unclear if this is only for Wyoming or across the entire route. Also new research should be considered, as there is a broad-based Wyoming Sage-Grouse Implementation Team committee that is currently investigating noise impacts. Facilities that produce continual noise can affect the breeding vocalizations of greater sage-grouse.

Response(s)

SI1bd Recommendation noted. The Project must comply with the plan requirements of each field office and any relevant conservation plans or agreements. Different field offices have different landscapes, resources, and resource uses; thus different resource management needs. Thus, some management prescriptions, such as the timing restrictions, differ between plans.

The Applicant will be engaged in on-going coordination with the agencies during project development and may extend timing restrictions in site-specific areas based on agency recommendations.

SI1be Seasonal and spatial plant and wildlife restrictions would apply to all surface-disturbing or disruptive activities associated with construction, operation, and maintenance of the Project, unless an exception to the stipulation were granted by agency personnel, in accordance with agency policy or land use plans, in certain areas to avoid or reduce impacts on wildlife. This requirement was described in Table 2-13 of the Final EIS. Additional text has been added to Section 2.4.7 to clarify this requirement.

Protections to sage-grouse extended to the operations and maintenance periods as part of the Projects' design features of the Proposed Action are listed in Table 3-102 and include: alteration of placement of roads or towers (Design Feature 3), construction to avian-safe design standards (Design Feature 4), seasonal restrictions (Design Feature 6), vehicle access restriction (Design Feature 26), construction activity access restriction (Design Feature 27), personnel instruction (Design Feature 28), hazardous material restrictions (Design Feature 30), and vehicle speed limit for overland travel (Design Feature 39).

SI1bf The BLM has clearly indicated the agency's consideration of granting waivers, exemptions, and modifications to various stipulations in BLM RMPs in the EIS. BLM NEPA regulations do not require the BLM to allow public comment on subsequent consideration of individual waivers, exemptions, and modifications.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1bg

Continuous noise from industrial facilities, such high voltage transmission lines and substations, close to active greater sage-grouse leks would interfere with male greater sage-grouse strutting behavior which could reduce the reproductive success of greater sage-grouse using these leks. The BLM does note in the Gateway West FEIS, "construction-related noise and dust disturbance would occur during construction, which could potentially make habitat within the immediate vicinity of the activity temporally unsuitable for this species." FEIS at 3.11-65. We strongly recommend that *BLM carefully review and incorporate new research* which relates to noise impacts on grouse, as these are suggesting threats to sage-grouse population viability – through abundance, stress levels, and behavior [29]. In the recently released Miles City Draft RMP, BLM recognizes the impacts of noise, "Movements associated with oil and gas wells, noise associated with disruptive activities and compressor stations, vehicle use, and human presence would impact numerous wildlife species indirectly, including sage grouse. Sage-grouse numbers on leks within approximately 1 mile of compressor stations would contain lower numbers than leks greater than 1 mile from compressors. Male attendance at leks would be expected to be reduced when subjected to the current standard noise limitation of 50 decibels at the lek site." Miles City DEIS/RMP at 4-135.

iv. Winter Range/Concentration Areas

SI1bh

Because GRSG are designated as special status species, the species' distribution, key habitat areas, and special management needs should be identified in the FEIS. Winter habitat, including concentration areas, were referenced in the TWE DEIS document (DEIS 3.8-14): "In years with severe winter conditions (i.e., deep snow), greater sage-grouse often gather in large flocks in areas with the highest quality winter habitat. It is suggested that high quality winter habitat is limited in portions of the greater sage-grouse's range (Connelly et al. 2000). Wintering habitat for greater sage-grouse has been defined for populations in Colorado and Utah, and is currently being defined for populations in Wyoming (WGFD 2012)" and (DEIS 3.8-60) "Marking would be prioritized in areas near leks, in winter concentration areas …" As noted above, there is a *wide range of timing protections across the field offices*. It is poorly addressed in the GWS DEIS.

SI1bi

In addition to developing some consistency through the RMP amendments, the GWS DEIS itself needs to be improved. *It fails to identify (through mapping) and assess the spatial distribution/acreage of current winter habitat for sage grouse and its current quality*, especially as this latter will likely drive selection of appropriate protective measures and prioritize restoration activities. The Governor-appointed Wyoming Sage-grouse Implementation Team recently commissioned the Wyoming Chapter of the Wildlife Society, a non-profit organization of wildlife biologists, to review current protocol for identifying and mapping sage-grouse winter concentration areas. This report would be helpful for consideration in BLM's efforts going

---

[29] Blickley, J.L., D. Blackwood, and G.L. Patricelli. 2012. Experimental evidence for the effects of chronic anthropogenic noise on abundance of greater sage-grouse at leks. Conservation Biology 26(3):461-471.
Blickley, J.L. and G.L. Patricelli. 2012. Chapter 3: potential acoustic masking of greater sage-grouse (Centrocercus urophasianus) display compnents by chronic industrial noise. Ornithological Monographs 74: 23-35.

32

Response(s)

SI1bg

Noise impacts on sage-grouse are addressed in Section 3.2.8.4.3.

Noise was identified as a direct and indirect effect in the construction and operation phases of the Project in Tables 3-98 and 3-99. Also, in Table 3-100, noise is identified as a potential direct effect of the Project that would contribute to (1) the present or threatened destruction, modification, or curtailment of sage-grouse habitat or range; and (2) disease and predation. These effects are described in more detail in the sections titled Disturbance to Sage-grouse and Disruption of Breeding Activities due to Increased Human Presence and Noise at Lek Locations; Disturbance to Sage-grouse During Nesting, Breeding, and Wintering Periods Resulting from Human Presence, Vehicle Use, and Noise During Construction and Maintenance; Disease and Predation; Disruption of Sage-grouse Nesting and Breeding Activities; and Sage-grouse Avoidance of Habitat Due to Human Presence Resulting from Pubic Use of New Access Routes.

Wyoming Executive Order 2011-5 outlines the management of greater sage-grouse in the state of Wyoming. The regulatory framework pertinent to sage-grouse in Colorado and Utah is provided in Section 3.2.8.1.1.

SI1bh

The analysis in the Final EIS has been revised to incorporate additional information regarding winter habitats, where available. Under all alternative routes and route variations, design features and site-specific selective mitigation measures would be used to reduce the effects of the Project on sage-grouse. These measures are described in Section 3.2.8.4.3 and Table 3-102 of the Final EIS.

SI1bi

The BLM conducted the analysis of potential effects on sage-grouse using the best available information, including information regarding the location of priority habitats. The analysis has been revised to incorporate additional information regarding winter and brood-rearing habitats, where available. The referenced report was reviewed, though BLM is not responsible for identifying and mapping sage-grouse habitats.

	Comment(s)	Response(s)
SI1	**Audubon Rockies et. al (cont.)**	
SI1bi	forward[30]. *The protocol proposed within this report may be helpful to the BLM when developing a defensible protocol for identifying and mapping sage-grouse winter concentration areas*.	
SI1bj	Because of the importance of this habitat to grouse, we suggest protection for these areas based on what has been presented in the Lander FEIS/RMP (Record # 3006): "In identified greater sage-grouse winter range, *vegetation treatments should emphasize strategically reducing wildfire risk* around or in the winter range and maintaining winter range habitat quality."	The Project must comply with the plan requirements of each BLM field office and any relevant conservation plans or agreements. Different BLM field offices have different landscapes, resources and resource uses; thus, different resource management needs. Thus, some management prescriptions, such as the distance of protective buffers around greater sage-grouse leks, differ between plans. Varying requirements are accommodated in the study methodology and analysis presented in the EIS.
	v. Fences Fences are poorly addressed in the GWS DEIS. Fencing can be an obstacle or potential hazard to special status wildlife species by concentrating livestock, adversely impacting vegetation and fragmenting habitat. In relation to sage-grouse, the addition of new fences further fragments the landscape, provides potential collision points, and provides perching opportunities for raptors – all detrimental to sage-grouse. In addition to fence surveys in the Lander and Rock Springs Wyoming BLM Field Office areas showing that Greater Sage-grouse can be injured or killed as a result of flying into fence wires (Lander RMP FEIS at 969), a Utah study[31] found that 18% of sage-grouse deaths were due to fence collisions. A 2009 WGFD report examined sage-grouse mortalities near Farson and found that sage-grouse fence diverters reduced sage-grouse fatalities by 61 percent[32].	
SI1bk	While transmission lines are not generally associated with fences, construction of large vertical structures will likely result in behavioral changes by grouse. Therefore, BLM should require monitoring of fences in the areas adjacent to the line to determine locations where collisions are occurring. We suggest that the proponent *target fence-related mitigation to needed areas – specifically, remove or mark identified wildlife hazard fences that are adversely affecting wildlife where opportunities exist*. This option was provided in the Miles City Draft RMP, **"**Fences in high-risk areas (based on proximity to leks, lek size, and topography) would be removed, modified, or marked to reduce outright sage-grouse strikes and mortality." DEIS at 2-49.	A Biological Resources Task Group was established for the Project and includes representatives from the state wildlife agencies. Project alternative routes and route variations and selective mitigation measures were developed in coordination with the Biological Resources Task Group. Collision areas would be addressed as adaptive management. Also, the HEA process will address all appropriate measures. Fence removal and marking with flight diverters are listed as a potential habitat restoration and mitigation tool in Table D1 of Exhibit F2 in Appendix K.
	vi. Riparian/Wetland Areas The BLM's objective for managing riparian and wetland habitats should be to maintain, restore, or improve riparian areas to achieve a healthy and productive ecological condition that provides benefits and values within site capability. Wetland and riparian areas are unique and among the most productive and important ecosystems. Although comprising only a small percentage of the BLM lands, they affect most other resources and values. Given the high value of these areas for a	

---

[30] This report can be downloaded at http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/SGIT_051513_WYTWSAREAREPORT0004118.pdf

[31] Danvir, R.E. 2002. Sage grouse ecology and management in Northern Utah sagebrush-steppe. Deseret Land and Livestock Ranch and the Foundation for Quality Research Management, Woodruff, UT. ftp://ftpfc.sc.egov.usda.gov/WY/Sage%20Grouse/Ecology%20of%20Northern%20Utah%20sage%20grouse.pdf

[32] Christiansen, T. 2009. Fence marking to reduce greater sage-grouse (*Centrocercus urophasianus*) collisions and mortality near Farson, Wyoming – Summary of interim results. Wyoming Game and Fish Department, Cheyenne, WY.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

variety of resources, all aspects of riparian and wetland area inventory, monitoring, and management will involve a multidisciplinary effort. The impacts of a high voltage transmission line traversing the landscape should be considered and appropriately managed.

Riparian-wetland areas are a component of brood-rearing habitat for greater sage-grouse because they provide needed forbs and insects necessary for chick survival. Actions that improve riparian-wetlands improve habitats for special status wildlife species, especially increasing the quantity and quality of riparian-wetland vegetation and insects, are critical for sage-grouse.

SI1bl Therefore, we encourage the following as riparian/wetland habitat was inadequately addressed in the DEIS. The Rawlins Field Office had protections to only 500 feet of riparian and wetland areas while the Salt Lake Field Office extended protections out to 1,200 feet. We propose strengthening these: *Surface disturbing and disruptive activities should be prohibited within 1,329 feet (0.25 mile) of riparian habitats and 100-year floodplains* where mapped. Where unavoidable, the "crossing-specific plans" should include specific language that addresses the *avoidance of introducing or expanding invasive nonnative species*. Treatment to address INN species is expensive and with uncertain success at best. It involves highly disruptive management with potential for adverse impacts to greater sage-grouse. With limited budgets available for pest treatments, we encourage the BLM to emphasize reducing the likelihood of spread through management actions such as requiring washing of vehicles and limited surface disturbance. This latter suggestion applies to the *entire project area*, not just riparian areas.

vii. Monitoring and Enforcement

SI1bm The efficacy of many of the proposed mitigation measures are unknown. Therefore, these should be monitored to not only enable the proponent to modify actions where able but also to broaden our collective knowledge and thus minimize impacts from other proposed high voltage transmission lines. Obligations should be enforced and reports made publically available, thus improving public confidence in the evolving process and management of public/private lands.

viii. Off-site Mitigation

This project comes at a critical time for the conservation of GRSG. This "warranted but precluded" candidate species requires management and protection focused on ensuring local conservation success, in conjunction with an overall strategy to incorporate indirect and cumulative effects and to provide for rangewide persistence for the species. The adoption of objective methods based on the most complete and current science is the key component of such a strategy. Our organizations collectively stress that *avoidance of critical habitat and minimizing disturbances should occur before compensatory mitigation*. Where appropriate, effective off-site mitigation strategies will be an important tool to consider in management of GRSG. We are optimistic that *refinement of HEA for sage-grouse can lead to sound development with lasting conservation benefits* (see previous section addressing the HEA).

SI1bn *Identification of appropriate sites for off-site mitigation for GRSG is critical*. This species has an unprecedented amount of data that has been examined in recent years, which can serve as valuable tools in *identifying and prioritizing potential locations*. A comprehensive spatial analysis is needed to determine either (1) those areas where a critical habitat component is

34

Response(s)

SI1bl The Project must comply with the RMP requirements of each BLM field office. Different BLM field offices have different landscapes and resources and, therefore, different resource management needs. Thus, some management prescriptions, such as the distance of protective buffers around wetland and riparian areas, differ between RMPs. Varying requirements are accommodated in the study methodology and analysis presented in the EIS. The BLM believes the design features the Proposed Action for environmental protection (refer to Design Feature 34 in Table 2-8) adequately address vehicle washing. In addition, the POD will include a Noxious Weed Management Plan to be developed in coordination with cooperating agencies and finalized for the selected route before construction may proceed that includes noxious weed control measures in accordance with existing regulations and BLM and USFS requirements. Control measures will be based on species-specific and site-specific conditions (e.g., proximity to water or riparian areas, agricultural areas, and season) and will be coordinated with the BLM or USFS Authorized Officer or his/her designated representative, project managers, the compliance inspection contractor (CIC), and the construction contractor's weed management specialist. The Noxious Weed Management Plan will be based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 and Forest Service Noxious Weed Management Manual 2080.

SI1bm See response to Comment SI1n.

SI1bn The Applicant will work with the agencies and stakeholders to identify mitigation projects that may be used to compensate for the permanent and interim losses of habitat services. All mitigation projects would be subject to appropriate land management agency or landowner approval, permits, and planning.

Potential areas identified as locations for off-site mitigation will be evaluated using variables identified in the peer-reviewed literature as representative of sage-grouse habitat. Habitat service levels are intended to reflect both the quality of the habitat and the ability of the birds to use the habitat (refer to Appendix A of Exhibit F2 in Appendix K).

Comment(s)

SI1 | **Audubon Rockies et. al (cont.)**

SI1bn missing or (2) those areas that support large populations of sage-grouse and are at high risk for wildfire, invasion of cheatgrass, or other threats. In 2010, Doherty et al. developed a scientifically valid range-wide conservation planning tool based on density of males on leks. This has been subsequently recognized as a valuable tool by USFWS, BLM, and state agencies. States have also begun to prioritize GRSG habitat. In 2012, the Nevada Department of Wildlife published its sage-grouse habitat categorization analysis, which delineated five classes of sage-grouse habitat ranging from essential/irreplaceable habitat to unsuitable habitat, and which can be used to direct mitigation and conservation efforts within Nevada. Our organizations refer the BLM to the USGS Summary Report[3], specifically Section IV (Factor D: Policies and Programs Affecting Sage-Grouse Conservation) for a more detailed review of existing state programs that could assist in identifying and prioritizing mitigation opportunities.

SI1bo The benefits for off-site mitigation should not only be considered for an individual species. Although this is paramount when considering methods to off-set direct impacts to a specific species, but to other species and Lands with Wilderness Characteristics, as opportunities arise. Bird Habitat Conservation Areas have been identified by state partners as places where the "best opportunity exists for effective conservation activities" (TWE DEIS 3.7-9). These have even been grouped into three categories of priority, which are broadly defined but not illustrated within the DEIS. As these are specified as being prioritized as areas for potential compensatory mitigation within the GWS Avian Protection Plan, more information is needed on the prioritization of the three habitat categories.

e. Ensuring Management Options Going Forward Through Identifying Refugias or Strongholds

Commenced in 2011, BLM's comprehensive National Planning Strategy focuses on developing and implementing GRSG conservation policies across the bird's range are one of the highest level species recovery efforts in the history of the western United States. The BLM's emphasis for protecting and managing GRSG habitat incorporates the following principles:

1) Protection of unfragmented habitats;
2) Minimization of habitat loss and fragmentation; and
3) Management of habitats to maintain, enhance, or restore conditions that meet Greater Sage-Grouse life history needs.

A December 2011 meeting of top federal and state stakeholders on GRSG, including Wyoming Governor Matt Mead and Department of Interior Secretary Ken Salazar, resulted in the formation of a "Sage-Grouse Task Force (Task Force) chaired by Governors Mead (WY) and Hickenlooper (CO) and the Director of the BLM." The Task Force tasked USFWS "with the development of conservation objectives for the sage-grouse." The result is the Sage-Grouse Conservation Objectives Team Draft Report (COT Report)[33], published in February 2013, which also supports protecting key habitats through "an avoidance first strategy" to retain management options:

---

[33] U.S. Fish and Wildlife Service. 2013. Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report. U.S. Fish and Wildlife Service, Denver, CO. February 2013.http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/COT/COT-Report-with-Dear-Interested-Reader-Letter.pdf

Response(s)

SI1bo Recommendations regarding the location of potential off-site mitigation are consistent with BLM and USDI mitigation policies and will be considered during development of any potential mitigation. Off-site mitigation being considered by the BLM and relevant regulations and policies are described in in Appendix E (BLM Mitigation Guidance), Appendix K (Sage-grouse Compliance) and Section 3.2.9 (migratory birds) of the Final EIS.

Comprehensive review of off-site mitigation sites is not within the scope of the Final EIS.

Comment(s)

SI1 | **Audubon Rockies et. al (cont.)**

> In light of these significant uncertainties, impacts to sage-grouse and their habitats should be avoided to the maximum extent possible to retain conservation options. This approach will ensure that potentially unidentified key components to long-term viability of sage-grouse are not lost, and that management flexibility and the ability to implement management changes will be retained as current information gaps are filled. *Implementing an avoidance first strategy should reduce or avoid continuing declines of sage-grouse populations and habitats, as well as limit further reduction in management and restoration options*. (USFWS 2013 at 31, emphasis added)

SI1bp The best way to protect the most valuable and essential remaining habitat and further recovery goals is to provide assured protections to the most important remaining sage-grouse habitat. *These lands should be identified and protected with prioritization afforded to 1) core/priority habitats lands, 2) adjacent or stand-alone habitat where large intact blocks remain, (including those in non-core habitat), and 3) the special habitat types which may be limited within a given area (breeding, nesting, brood-rearing, winter, and connectivity habitats).*

Multiple-use management does not "mandate" allowing all uses on all lands. BLM retains the discretion to prioritize, weigh various resource mixes, and choose between various multiple uses throughout the project planning area. Because so much of GRSG eastern has already been leased for energy development and subsequently fragmented, BLM needs to aggressively pursue avoidance where that proven strategy remains available.

f. Candidate Conservation Agreement (CCA)/Candidate Conservation Agreement with Assurances (CCAA)

SI1bq As with APPs, we request clarification on opportunities for public comment and engagement on the content of the CCAs/CCAAs.

g. Feasibility of Removing, Burying, or Modifying Existing Power Lines within Priority GRSG Habitat

SI1br The BLM is instructed by BLM IM 2012-044 to incorporate conservation measures identified in the Sage-grouse National Technical Team Report, created in 2011. One of the NTT conservation measures related to ROWs includes evaluating the feasibility of removing, burying, or modifying existing power lines within priority GRSG habitat. The DEIS does discuss this briefly in Chapter 2, however dismisses from further consideration "because this alternative was not economically feasible" (DEIS p. 2-125). Our organizations respectfully request consideration and analysis be provided for burying distribution lines associated with GWS, as well as modifying existing power lines. These actions would reduce, and in some instances eliminate, perching opportunities for avian predators and collision risks for GRSG. These analyses are not meant for the entire length of the line but for critical areas of concern. Some technologies (i.e. crosslinked polyethylene cables, superconductors, elpipes, etc.) are mechanically robust options for burial. While distances are generally short, advances are being made. In Connecticut, the Middletown-Norwalk project broke ground in 2006 and buried 345-kV over 26 miles.

36

Response(s)

SI1bp As described in Appendix K, BLM is collaborating with the Applicant and other cooperating agencies to develop a sage-grouse compensatory mitigation plan. Providing protections to existing sage-grouse habitats is one strategy being considered as an element of this plan.

SI1bq The EIS does not reference development of any Candidate Conservation Agreements or Candidate Conservation Agreements with Assurances, and the BLM does not anticipate that any of these agreements will be developed in association with the Project. Compliance with the Endangered Species Act will be achieved through agency-to-agency consultation under Section 7 of the Endangered Species Act.

SI1br In general, burying a transmission line could have greater environmental effects or would involve a trade-off of resource impacts. The Applicant considered a range of technologies and considers the project description to reflect the best available technologies. Undergrounding the transmission line was considered and eliminated, as explained in Section 2.6.1.4 of the Final EIS.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

X. Golden Eagles and Raptors

a. Protective Stipulations

Raptors are sensitive to environmental disturbance and occupy an ecological position at the top of the food chain; thus, they act as biological indicators of environmental quality. The nesting season is considered the most critical period in the raptor life-cycle because it determines population productivity, short-term diversity, and long-term trends. Therefore serious attention should be paid to the raptor buffers as all raptors are protected under the Migratory Bird Treaty Act. *Raptor nest protective buffers* (surface-disturbing and disruptive activities subject to seasonal limitations) proposed are inconsistent across the project and inadequate, as was noted for Greater Sage-grouse. Any activity that disrupts breeding, feeding, sheltering, and roosting behavior and causes, or is likely to cause, nest abandonment or reduced productivity is considered disturbance and is a violation of BGEPA. We encourage the BLM to adopt the following protections - prohibiting surface-disturbing activities within *1 mile of Golden Eagle (GOEA) nests and 1 mile for Ferruginous Hawk nests*. Our organizations support the specificity of "nests active within the past 7 years" and the inclusion of winter roost sites. We *recommend 1 mile buffer for all other raptors nests* as well (BLM Special Status Raptors – Burrowing Owl, Swainson's Hawk, Peregrine Falcon, and Northern Goshawk). SI1bs

The USFWS (USFWS 2002a) identifies courtship, nest construction, incubation, and early brooding as higher risk periods in the life-cycles of raptors when adults are more prone to abandon nests due to disturbance. The USFWS (USFWS 2002a) also indicates that human activities resulting in disturbance to raptors can cause population declines. Therefore, seasonal restrictions and buffers around nest sites are intended to minimize disturbance to GOEA. We recommend that *year-round exclusion areas* also be considered for use, if circumstances require.

b. Golden Eagles

Golden eagles (GOEA) are protected under two major forms of federal legislation, the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA), and under increasing federal scrutiny with uncertain population levels. Based on the USFWS' analysis of populations across the nation, there is no safe allowable take level for GOEA; however, take is likely unavoidable with transmission project of this magnitude and in this location. Use by GOEA is not surprising as the application area contains native shrubland and grassland communities, as well as natural landscape features, that provide foraging and nesting opportunities sought by this species. In reviewing and commenting on the GWS DEIS, our organizations recommended that the BLM *develop a supplemental GOEA document for public review and comment*. Given the growing concern for these majestic birds, especially related to mortalities associated with wind farms and expanding transmission infrastructure, any development *decisions that will impact GOEA must be placed within a regional population context* much larger than the area immediately surrounding any proposed transmission project. In addition, *areas out 10 miles from the application area should be evaluated*. *Adequate buffers for GOEA should be in place and monitored to evaluate effectiveness*. Compensatory mitigation for retrofitting of lethal power poles in the region should be considered for the first five years of SI1bt

37

Response(s)

SI1bs Due to the large size of the Project area and associated variations in local climate, the chronology of raptor nesting activities is variable from site to site and area to area. Raptor nest spatial buffers and seasonal restrictions incorporated into the EIS represent the recommendations of regulatory agencies responsible for protection of raptors (i.e., FWS) in each of the three states crossed.

The comment incorrectly implies that the cited types of disturbance would result in a violation of the Bald and Golden Eagle Protection Act for any raptor species. Regardless, the EIS contains the spatial and seasonal protections recommended by the FWS for each of the species identified in the comment.

SI1bt The analysis recommendations referenced in this comment are typical for industrial-scale wind energy developments where the NEPA analysis conducted for those projects predicted a clear risk to eagles, including a high probability of mortality. For this project, BLM's NEPA analysis did not find that mortality or take of eagles was likely under any of the alternative routes and route variations. Thus, the analysis presented in the EIS is appropriate for the identified risk to eagles. The BLM has advised the Applicant of the company's responsibility to protect eagles and requested that the Applicant coordinate with FWS on this issue. The BLM is not aware of recommendations from FWS to reconsider the analysis conducted or to develop an eagle conservation plan for this project.

See also response to Comment SI1bs.

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1bt operation. We note that spatial buffers for GOEA nests, as is done for Bald Eagles in most field office planning areas, should be 1.0 miles.

Attachments:

- Attachment 1 – Gateway West HEA comments
- Attachment 2 – WWEC Lawsuit Settlement Agreement
- Attachment 3 – Exhibit A to WWEC Lawsuit Settlement Agreement

Appendices:

- Appendix A – Wyoming: Detailed Analyses of Route Segments
- Appendix B – Colorado: Detailed Analyses of Route Segments
- Appendix C – Utah: Detailed Analyses of Route Segments

References:

Hanser, S.E., C.L. Aldridge, M. Leu, M.M. Rowland, S.E. Nielsen, and S.T. Knick. 2011. Greater Sage-Grouse: General Use and Roost Site Occurrence with Pellet Counts as a Measure of Relative Abundance Chapter 5 in S.E. Hanser, M. Leu, S.T. Knick, and C.L. Aldridge (editors). Sagebrush ecosystem conservation and management: ecoregional assessment tools and models for the Wyoming Basins. Allen Press, Lawrence, KS.

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

APPENDIX A:

Wyoming State
Detailed Analyses of
Route Segments

Comment(s)	Response(s)
SI1 **Audubon Rockies et. al (cont.)**	
APPENDIX A: Wyoming State Detailed Analyses of Route Segments While all of the routes would cause serious impacts to the environment, we have carefully outlined below the likely resources impacts of each route, with the goal of providing information to the BLM that identifies a route through Wyoming with the lowest environmental impacts. This information is based on local knowledge, independent mapping and analysis, site visits along the routes, and information from the DEIS. Based on our evaluations and the limited manner in which information is presented in the DEIS (see below), we have endeavored to identify the likely resource impacts of the alternative routes. Our groups will continue to examine these routes and welcome future opportunities to work with BLM to further refine the ultimate route selection.	
SI1bu As noted in Section VII of our comments, the DEIS presents wildlife impacts by alternative route (see Table 3-108 in DEIS as example) rather than segments. This level of information aggregates impacts at too coarse of a spatial scale to allow reviewers to understand and evaluate the level of impact across the individual segments[1]. Given this, the manner in which wildlife impacts are presented in the *DEIS minimizes the ability of reviewers to provide feedback or guidance on routing combinations, severely minimizing the value of public engagement*. *Options presented in the DEIS are thus severely limited to those configurations presented, with no ability to craft unique combinations*. Our organizations strongly encourage this information be made available for all segments in the FEIS, to improve selection of a route with the least amount of resource impacts.	SI1bu See response to Comment SI1a.
During our analysis of the DEIS, we noted the removal of the most westerly routes proposed in the scoping documents. We appreciate the BLM's recognition of the high number of negative impacts associated with additional development activities in that area.	
SI1bv Based on our analysis of the DEIS and field investigations, the route with the lowest environmental impacts going through Wyoming traverses segments which comprise portions of Alternative Routes WYCO-D and WYCO-F (portions of which also encompass WYCO-B). These segments are W15, W21, W35, W36, W30, W32, W101, W125, W108, W107, W111, W121, W299, W300, and W321 (bolded below).	SI1bv Comment and route preference noted.
Segment W21 and W35 (BLM Preferred) - Both W21 and W35 intersect Hanna Core Area, but utilizes the Executive Order 2011-05 (Greater Sage-grouse Core Area Protection) designated transmission corridor. South Rawlins Core Area is also just south of these segments. SI1bw - Greater Sage-grouse (GRSG) 25% regional breeding density polygon[2] overlaps the eastern portion of segment W21 (indicating the highest density of breeding birds and of the highest conservation priority) and W35 almost entirely encompassed by 50%	SI1bw Potential impacts in sage-grouse habitats under all alternative routes and route variations will be minimized through the application of the design features and selective mitigation measures (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3 and Table 3-102). High residual impacts on sage-grouse habitat remaining after application of the design features and selective mitigation measures will be addressed via offsite mitigation as described in Appendix K.

---

[1] For example, wildlife impact analyses by segment would be especially helpful in comparing route segments. Having this information for all segments, which could be accomplished through GIS analyses of data already compiled for the DEIS, would provide more defensible justification for selected route segments and help identify mitigation opportunities.

[2] Doherty K.E., J.D. Tack, J.S. Evans, and D.E. Naugle. 2010. Breeding densities of greater sage-grouse: A tool for range-wide conservation planning.

1 | Appendix A: WY Routes

Comment(s)

SI1 | **Audubon Rockies et. al (cont.)**

SI1bw breeding densities. Given Core Areas and documented breeding densities, this segment warrants conservative management going forward to minimize impacts to grouse. [**See Figure WY-1 below**]

SI1bx
- These segments also includes numerous sightings of Ferruginous Hawks (WYNDD), which conservation management going forward to minimize impacts.

Segment W36, W30 and W32 (All Alternatives/BLM Preferred)
- *Lowest environmental impact*
- Already moderately disturbed and fragmented
- Intersects Greater South Pass Core Area, but utilizes the Executive Order 2011-05 (Greater Sage-grouse Core Area Protection) designated transmission corridor. South Rawlins Core Area is also just south of the segment. Greater Sage-grouse (GRSG) 25% regional breeding density polygon[3] overlaps the segment just east of the designated transmission corridor (indicating the highest density of breeding birds and of the highest conservation priority). Given Core Areas and documented breeding densities, this segment warrants conservative management going forward to minimize impacts to grouse. [**See Figure WY-1 below**] SI1by
- Shamrock Hills Important Bird Area is 2.7 miles north of segment 30, causing concern about impacts to raptors. BLM will need strong mitigation/minimization efforts, especially as ferruginous hawk populations are declining. Options that should be considered by the BLM and the proponent include but are not limited to designation of an ACEC and conservation easements to benefit raptors. [**See Figure WY-2 below**] SI1bz

  "*The area is known as one of the largest breeding grounds for ferruginous hawks in the western U.S. Other migratory birds known to utilize this IBA include golden eagle, burrowing owl, northern harrier, prairie falcon, American kestrel, great horned owl, and red-tailed hawk.*" (TWE DEIS p.3.7-27)

Segment W101 (BLM Preferred)
- *Lowest environmental impact*
- Continental Divide – Creston (CD-C) gas field (8,950 wells) overlaps this segment – already heavily disturbed.

Segment W102
- *Moderate environmental impact (but of concern due to where it leads)*
- Although this segment likely has a lot of disturbance already, concerned about route going south from here (into high environmental impact segments 60 & 70)
- CD-C gas field (8,950 wells) overlaps this segment– already heavily disturbed.

Segments W128 and W27
- *Moderate environmental impact (but of concern due to where it leads)*
- Although the northern portion likely has a lot of disturbance already, concerned about route south from here (segment W409 – high environmental impacts),
- CD-C gas field (8,950 wells) overlaps these segments

---

[3] Doherty K.E., J.D. Tack, J.S. Evans, and D.E. Naugle. 2010. Breeding densities of greater sage-grouse: A tool for range-wide conservation planning.

2 | Appendix A: WY Routes

Response(s)

SI1bx Comment and route preference noted. Potential impacts on raptors under all alternative routes and route variations will be minimized through the application of the design features and selective mitigation measures (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3 and Table 3-102).

SI1by Comment and route preference noted. See response to Comment SI1bw.

SI1bz See response to Comment SI1bx.

Comment(s)		Response(s)	
SI1	**Audubon Rockies et. al (cont.)**		
	- GRSG 75% regional breeding density polygon[1] overlaps the segment (indicating high density of leks and breeding birds and of high conservation priority) [**See Figure WY-1 below**]		
	Segment W409		
SI1ca	- *Highest environmental impact* – sage-grouse, Adobe Town CPWA, Powder Rim IBA - CD-C gas field (8,950 wells) overlaps northern end of this segment - GRSG 75% regional breeding density polygon[1] overlaps the northern end of this segment (indicating high density of leks and breeding birds and of high conservation priority) [**See Figure WY-1 below**] - Adobe Town CPWA abuts the segment, to the west - Powder Rim IBA overlaps southern end of segment [**See Figure WY-2 below**] … this is also a concern for Segment W113 (and Segment W116, as it leads south to W113). "*Because juniper habitat is limited in Wyoming, the bird community at Powder Rim IBA is unique and has significant conservation value. The juniper woodlands have been shown to support greater bird species diversity than the surrounding shrubland habitat." (TWE DEIS p.3.7-26)*	SI1ca	See response to Comment SI1bw.
	Segment W125, W108, W107 (BLM Preferred) - *Lowest environmental impact* - Through CD-C gas field (8,950 wells), heavy drilling activity on both sides (DEIS Figure 3.2-5) - Near a graded roadway (Wamsutter-Dad road) most of the way to Dad, already disturbed and fragmented, but veers away to the south from this road toward southern end of segment		
SI1cb	➔ To connect to W111, suggest have a connection that is above Muddy Creek Wetlands IBA (previously W112 and W115 were options presented in Scoping, however these run through the IBA and are problematic) ○ Muddy Creek Important Bird Area overlaps northern end of this segment, on *both sides* of the segment. These wetlands contain high conservation value. [**See Figure WY-2 below**] *"Hundreds of species of waterbirds, shorebirds, and waterfowl from both the Pacific and Central flyways utilize the area for breeding and migration. The diversity of habitats provides an oasis for a large variety of bird species ... The wetlands support up to 50,000 ducks during migration and a host of breeding shorebirds.*" (TWE DEIS p.3.7-26)	SI1cb	Comment and route preference noted. The analysis of potential effects on migratory birds has been updated in Section 3.2.9 of the Final EIS. It includes references to important bird areas (IBA) and discloses potential impacts on the Muddy Creek Wetlands IBA.
	Segment W120 (BLM Preferred) - Mexican Flats to Sand Creek Road - *Moderate environmental impact* – sage-grouse and Muddy Creek wetlands ○ This segment overlapped by CD-C gas field (8,950 wells)		
SI1cc	○ GRSG 75% regional breeding density polygon[1] overlaps the southern half of this segment (indicating high density of leks and breeding birds and of high conservation priority) [**See Figure WY-1 below**]	SI1cc	See response to Comment SI1bw.
SI1cd	○ Concerned that being near HWY 789, while not adjacent to it (which would be preferable), widens impact corridor	SI1cd	Comment and route preference noted.

3 | Appendix A: WY Routes

Comment(s)

SI1

Audubon Rockies et. al (cont.)

- o Muddy Creek Important Bird Area overlaps northern end of this segment, on *both sides* of the segment. These wetlands contain high conservation value. [**See Figure WY-2 below**]

"Hundreds of species of waterbirds, shorebirds, and waterfowl from both the Pacific and Central flyways utilize the area for breeding and migration. The diversity of habitats provides an oasis for a large variety of bird species ... The wetlands support up to 50,000 ducks during migration and a host of breeding shorebirds." (TWE DEIS p.3.7-26)

Segment W116 and W113

SI1ce
- Request clarification and specific analysis from BLM on potential raptor impacts
- *Highest environmental impact* – unfragmented, low level of existing disturbances
- Very concerned about southern end of this segment (segment W113). While northern end is overlapped by CD-C gas field (8,950 wells), just south of Mexican Flats the segment traverses rugged terrain that is currently not developed. Anticipated impacts include habitat fragmentation through undeveloped landscape, substantial visual impacts, soil erosion, and potential for raptor conflicts.

Segment W111 - Mexican Flats to Sand Creek Rd. along Hwy 789 corridor
- *Moderate environmental impact* – sage-grouse and Muddy Creek wetlands
- Runs parallel to Highway 789, in landscape already fragmented by gas development and power lines

SI1cf
- To avoid additional cumulative impacts to Muddy Creek Wetlands and to avoid isolating Muddy Creek between two linear forms (highway and transmission) of disturbance and obstruction., request having transmission line run along eastern side of the highway.

SI1cg
- Muddy Creek crosses the northern section of this segment and runs parallel to it for the remainder of the segment. Muddy Creek IBA overlaps northern end of this segment, along western edge (high conservation value - see text above). [**See Figure WY-2 below**]
- Project corridor encompasses at least 2 GRSG leks, GRSG 75% regional breeding density polygon[1] overlaps most of this segment (indicating high density of leks and breeding birds and of high conservation priority) [**See Figure WY-1 below**]

Segment W121, W299, W300, W321
- *Low environmental impact*

Segment W124 (BLM Preferred)

SI1ch
- Request clarification and specific analyses from BLM of potential impacts of this segment on raptors, other avian species, and big game species related to juniper upland habitat
- *Highest environmental impact* – sage-grouse, low level of existing disturbances on landscape (minimal habitat fragmentation), significant visual impacts
- Runs along or near Sand Creek road
- Not within any existing oil and gas fields (see DEIS Figure 3.2-5)
- Minimal existing disturbance
- Minimal existing habitat fragmentation
- Project corridor encompasses at least 4 GRSG lek sites

Response(s)

SI1ce

Specific impacts on raptors along Alternative WYCO-B are discussed in Section 3.2.8.5.4 and summarized in Table 3-106. Specific impacts on raptors along route variations are discussed in Appendix F.

SI1cf

Comment and route preference noted. The impact assessment methodology and types of potential impacts on wetlands are discussed in Section 3.2.4 of the Final EIS. Any wetlands or waterways crossed by the Project would be delineated before construction and any impacts on U.S. Army Corps of Engineers jurisdictional features would be subject to Section 404 of the Clean Water Act (refer to Water Resources Regulatory Framework, Section 3.2.4.1.1). Additionally, under Design Feature 33, surface-disturbing activities within 328 feet (100 meters) of riparian areas (including wetlands, stream banks, and shores of ponds or lakes) in Utah or Colorado would be required to meet exception criteria as defined by the BLM. In Wyoming, surface-disturbing activities within 500 feet of all wetlands and waterways would also be required to meet exception criteria in association with the BLM Rawlins Field Office RMP (BLM 2008).

The analysis of potential effects on migratory birds has been updated in Section 3.2.9 of the Final EIS. The revised analysis discloses potential impacts on IBAs, including the Muddy Creek Wetlands IBA.

SI1cg

Impacts on greater sage-grouse along Alternative WYCO-D and route variation are discussed in Section 3.2.8.5.4 and summarized in Table 3-105. The analysis of potential effects on migratory birds has been updated in Section 3.2.9 of the Final EIS. It includes references to IBAs and discloses potential impacts on the Muddy Creek Wetlands IBA.

SI1ch

Potential direct and indirect effects on wildlife species are assessed in the following sections: Raptors-Section 3.2.7.4.3, under the heading Raptors; Migratory birds-Section 3.2.9, under the heading Migratory Birds; Big game- Section 3.2.7.4.3, under the heading Big Game; Greater sage-grouse- Section 3.2.8.4.3, under the heading Special Status Upland Game Birds

Impacts for all resources are presented at the alternative route and route variation level rather than the segment level to allow a meaningful comparison of the alternative routes and route variations relevant to the decisions to be made. More information about the intensity of impacts along each segment considered in the EIS can be obtained by referring to Map Sets MV-7 through MV-12.

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ch

- GRSG 75% regional breeding density polygon[1] overlaps the eastern half of this segment (indicating high density of leks and breeding birds and of high conservation priority) [**See Figure WY-1 below**]

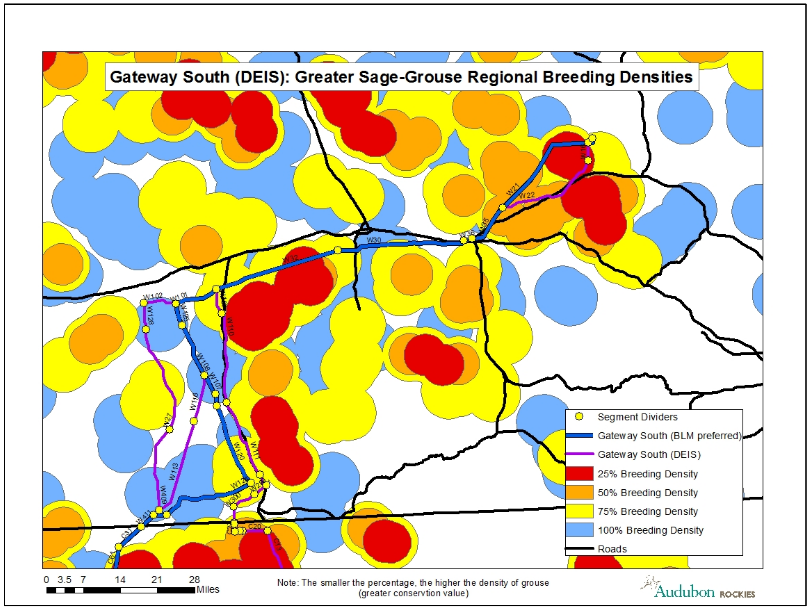
Segment W302 and W411 (BLM Preferred)

SI1ci

- *Highest environmental impact* – Powder Rim IBA, significant visual impacts, unfragmented habitat
- Segment entirely encompassed within the Powder Rim IBA (see text above) [**See Figure WY-2 below**]
- Virtually no existing disturbance or habitat fragmentation
- Significant visual impacts in a currently undeveloped landscape

SI1ci Comment noted.

Figure WY-1:

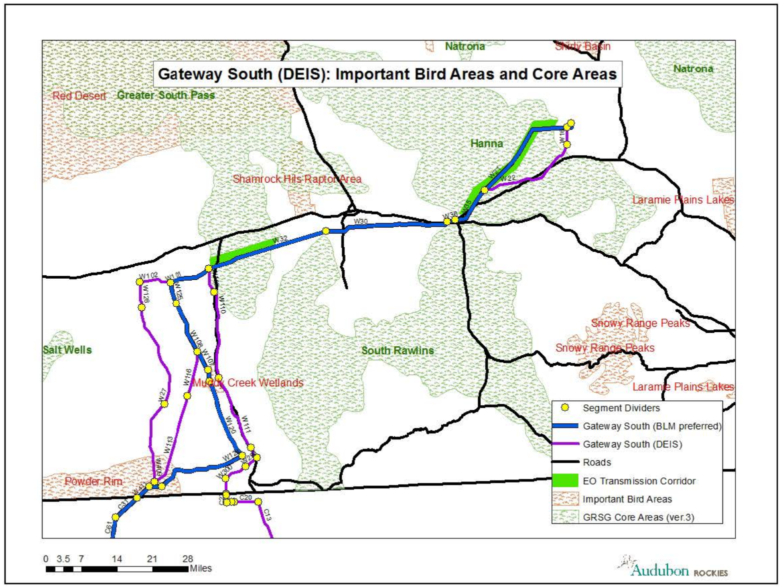

Gateway South (DEIS): Greater Sage-Grouse Regional Breeding Densities
Segment Dividers
Gateway South (BLM preferred)
Gateway South (DEIS)
25% Breeding Density
50% Breeding Density
75% Breeding Density
100% Breeding Density
Roads
0 3.5 7 14 21 28 Miles
Note: The smaller the percentage, the higher the density of grouse (greater conservtion value)
Audubon ROCKIES

Comment(s)

Response(s)

SI1	Audubon Rockies et. al (cont.)

Figure WY-2:



6 | Appendix A: WY Routes

Comment(s) **Response(s)**

SI1 **Audubon Rockies et. al (cont.)**

APPENDIX B:

Colorado State
Detailed Analyses of
Route Segments

Comment(s)	Response(s)
SI1 **Audubon Rockies et. al (cont.)**	

APPENDIX B: Colorado State Detailed Analyses of Route Segments

While all of the routes would cause serious impacts to the environment, we have carefully outlined below the likely resources impacts of each route, with the goal of providing information to the BLM that identifies a route through Colorado with the lowest environmental impacts. This information is based on local knowledge, independent mapping and analysis, site visits along the routes, and information from the DEIS. Our groups will continue to examine these routes and welcome future opportunities to work with BLM to further refine the ultimate route selection.

SI1cj The route as presented that provides for the least damaging effects to the environment is Alternative WYCO-D-1. In addition to this route following existing designated energy corridors as identified in the West-wide Energy Corridor EIS, focusing new development around the existing areas of disturbance along CO Highway 13 and U.S. Highway 40 where resource conflicts can be best avoided or mitigated and access for maintenance and monitoring is less arduous than the more remotely located preferred alternative.

Response SI1cj: Comment and route preference noted.

Included in this analysis are the continued issues identified with the least environmentally damaging route (WYCO-D-1) and the most obvious and egregious problems with the applicant and agency preferred route.

I. Wyoming state line to Tuttle Easement Micro-Siting

Recommendation: BLM adopt WYCO-D-1 as the proposed action.

- Lowest environmental impacts of all alternatives presented.

SI1ck
- This route largely crosses lands that are already heavily impacted by exurban housing development, agricultural operations and other surface disturbing activities. This route, depending on final siting options within the analyzed corridors, could potentially impact small portions of the Little Yampa Canyon, Juniper Canyon and Crooked Wash Lands with Wilderness Character (LWC) units. However, with careful micro-siting, much of the impacts to these three LWC units could be averted. In comparison, the other routes analyzed would impact 8 LWC units and thousands of acres of wilderness quality lands, potentially causing irreparable harm to the wilderness characteristics of these units.
- In addition to avoiding most potential impacts to LWC's, this route overlaps with designated West-wide Energy Corridors along Highway 13 and US Highway 40.
- Although impacts to wildlife habitat along Highway 13 route are significant, as a whole they are likely less impactful than the other two proposed routes, as this route segment parallels existing impacts for substantial portions of its length. The total impacts of this route are much to do with the fact that the length of the route is substantially longer than the other two alternatives. The applicant and agency-preferred routes are shorter in length but cross through higher quality habitat and significantly higher quality roadless lands.
- Lands with Wilderness Character: This route alternative has minimal impacts to lands with wilderness character with the two-mile ROW and 250 foot wide ROW impacting the

Response SI1ck: Comments and route preference noted.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ck

Little Yampa Canyon, Juniper Canyon and Crooked Wash units. However, much of, if not all impacts could be mitigated through micro-siting.

SI1cl

- Greater sage-grouse: The route contains a significant amount of acreage of Preliminary Priority Habitat; including a number of lek sites; northern portion overlaps 25-75% regional breeding density. The project must take all steps to avoid siting towers and associated facilities within PPH and any and all surface disturbing and permanent structure should be managed in accordance with the NW CO Greater Sage Grouse EIS.
- Big Game: There is the potential for significant impacts to big game. Within the proposed route there are a number of migration corridors, particularly along the Highway 13 portion of the route. The Highway 40 section of the route traverses critical winter range for much of its length. The actual location of the line should be sited in close proximity to existing disturbances, such as the existing power line ROW. Construction and maintenance should be subject to timing limitations and coordination with Colorado Parks and Wildlife should be conducted to minimize impacts to big game species as well as hunting seasons. Finally, Baseline population data should be provided in order to inform the public, monitor impacts and judge the efficacy of mitigation measures.
- Columbian sharp-tailed grouse (CSTG): CSTG is a state species of concern in Colorado. For the State Highway 13 portion of this segment, CSTG impacts closely mirror those to Greater sage-grouse. We recommend that the same suite of protections and prescriptions applied to Greater sage-grouse be applied for Columbian sharp-tailed grouse. Baseline population data should be provided in order to inform the public, monitor impacts and judge the efficacy of mitigation measures.
- Bitterbrush State Wildlife Area: The Bitterbrush SWA contains some of the highest quality winter range for big game species in the state of Colorado. The SWA has existing disturbances via an existing transmission line and pipeline corridor. Special care must be made to location of the transmission line as well as monitoring the cumulative impacts of multiple disturbances and creating and implementing appropriate mitigation measures.

II. Tuttle Easement Micro-Siting

All routes appear to go through GRSG Preliminary Priority Habitat,

WYCO-D-1

- *Lowest environmental impact of the options*
- Follows existing transmission (250' separation distance)
- Co-location with Gateway South and Zephyr possible
- Lands with Wilderness Characteristics:
  - Crooked Wash: intersected by the two mile wide corridor and 250'ROW.
- Impacts to Tuttle conservation easement

SI1cm

  - Sage-grouse habitat: location of the route should avoid PPH to whatever extent possible.
  - Big Game: In addition to avoiding critical winter habitat, timing limitations on construction should be employed to lessen impacts to elk and mule deer.

Response(s)

SI1cl

Comment and route preference noted.

Potential impacts in sage-grouse habitats along all alternative routes and route variations will be minimized through the application of the design features and selective mitigation measures (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3 and Table 3-102). High residual impacts on sage-grouse habitat remaining after application of the design features and selective mitigation measures will be addressed via offsite mitigation as described in Appendix K.

Potential direct and indirect effects on big game for Alternative WYCO D are addressed in Section 3.2.7.4.3 under the heading Big Game. Impacts on big game will be minimized through the application of the design features and selective mitigation measures listed in Table 3-80 (refer to Mitigation Planning and Effectiveness in Section 3.2.7.4.3).

The best available data was used to analyze impacts on Columbian sharp-tailed grouse. Population data are not collected by state wildlife agencies. Analysis of potential impacts on Columbian sharp-tailed grouse leks and winter habitat is included in Tables 3-106, 3-112, and 3-121 in Section 3.2.8.5. Potential impacts on Columbian sharp-tailed grouse will be minimized through the application of the Project's design features and selective mitigation measures (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3 and Table 3-102).

SI1cm

Comment and route preference noted.

The importance of the Tuttle Ranch Conservation Easement for sage-grouse, white-tailed prairie dogs, and black-footed ferrets is discussed in Section 3.2.8.5.4, under the heading Affected Environment (Colorado). The importance of the Tuttle Ranch Conservation Easement for big game is discussed in Section 3.2.7.5.4, under the heading Affected Environment (Colorado).

Impacts on big game will be minimized through the application of the design features and selective mitigation measures listed in Table 3-80 (refer to Mitigation Planning and Effectiveness in Section 3.2.7.4.3). Impacts on sage-grouse, white-tailed prairie dogs, and black-footed ferrets will be minimized through the application of the design features and selective mitigation measures listed in Table 3-104 (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3).

Comment(s)	Response(s)
SI1 **Audubon Rockies et. al (cont.)**	
SI1cm ○ White-Tailed prairie dogs (WTPD)/Black footed ferrets (BFF): Prior to the impacts of plague, the Tuttle Ranch had a healthy and stable WTPD population, unlike many other expansive private land holdings in the region. This made the ranch not just suitable for future BFF re-introduction efforts, but ideal because of the ability to manage variables such as recreational shooting and off-highway vehicle use. Once WTPD populations recover, BFF releases will hopefully occur. Siting of the transmission line should be in cooperation with CPW in order to minimize or eliminate impacts to this WTPD population in order to facilitate recovery.	
III. Criticism of WYCO-B and WYCO-B-2	
SI1cn Unlike the most recent similar proposal in the TransWest Express Transmission Project, the BLM and the applicant's preferred route's for Gateway South are nearly identical. Unfortunately, the route preferred by the agency and applicant is also the most damaging to wildlife, wilderness character and visual resources. Both WYCO-B and WYCO-B-2 would directly impact a minimum of eight (8) Lands with Wilderness Character units, fundamentally altering the landscape of the region. In the case of WYCO-B-2, there seems to be a explicit desire to degrade more of the public's resource in order to mitigate potential conflict with private property by creating a longer linear impact in two LWC units.	SI1cn Comments and route preference noted.
SI1co In addition to disturbing a much higher level of LWC lands, WYCO-B and WYCO-B-2 would fundamentally impact a greater amount of sage grouse and sage grouse habitat by placing the transmission line in an area that is relatively free from human development where sage grouse habitat remains largely intact. While every single analyzed route that comes into NW Colorado will impact Greater sage grouse, WYCO-D-1 at least follows existing linear disturbance features (highways and existing transmission lines) instead of creating new disturbances and new vectors for predation and human disturbance.	SI1co Comment and route preference noted.
The fact that neither the applicant or BLM have provided a concrete set of idea how to mitigate for the far-reaching impacts that the line will wreck on the landscape is disconcerting. While compensatory mitigation models like Habitat Equivalency Analysis and the CO Wildlife Habitat Exchange provide a framework for companies to utilize, BLM itself needs to mitigate the impacts created by its decisions. We believe that in conjunction with recent developments at DOI, that a framework has been identified as to how the plethora of impacts to wildlife and wilderness character might be potentially mitigated by the agency.	
IV. Regional Mitigation Strategy	
On April 4, 2014, the Department of the Interior (DOI) Energy and Climate Change Task Force released a report entitled "A Strategy for Improving the Mitigation Policies and Practices of The Department of the Interior" as directed by Interior Secretary Jewell's Secretarial Order 3330.	
3 **Appendix B: CO Routes**	

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

The report detailed landscape-level mitigation strategies to encourage dual objectives of smart development and conservation[1].

Listed as the number one priority in this strategy is the use of landscape-scale approaches, directing agencies to "Incorporate landscape-scale approaches into all facets of development and conservation planning, project review, and mitigation implementation."[2]

In addition to solidifying DOI's commitment to the mitigation hierarchy of avoid, minimize and mitigate, the strategy further clarifies the expected forms of compensatory mitigation including mitigation banking, condition of approval contingent mitigation, in-lieu fee mitigation and the associated scientific requirements for models.

As a whole, that strategy of compensatory mitigation currently largely follows the most commonly utilized model of proponent driven compensatory mitigation, reliant upon compensatory mitigation models such as the Habitat Equivalency Analysis (HEA) to provide ratios for mitigation for habitat lost to development.

With a landscape-scale challenge such as Gateway South, BLM needs to examine what the agency can do internally to mitigate impacts via management of public lands at the field office and regional scale, especially when BLM is evaluating multiple projects at the landscape level (TransWest Express and Gateway South) that will affect a similar suite of resources and values.

SI1cp In the case of Gateway South, we find the greatest impacts to be to Greater sage grouse habitat, Lands with Wilderness Character, visual resources and other sagebrush obligate species such as mule deer, pronghorn, Brewers sparrow, etc.

Typical compensatory mitigation techniques such as sagebrush restoration, conservation easements on private land and mitigation banking frequently lead to sizable net losses of the abovementioned resources and values. Instead, we feel that in order for BLM to employ tangible and effective mitigation it needs to also look to land use plans (LUP/RMP) as the vehicle.

For instance, the loss of wilderness quality lands and the associated values of solitude and opportunities of primitive and unconfined recreation will happen if the agency preferred alternative is adopted. Places like Simsberry Draw, West Sevenmile and Upper Little Snake lands with wilderness character units will be detrimentally effected. It can be challenging to use tools such as conservation easements to replace the wilderness values lost.

Therefore we are recommending that BLM utilize the land use amendment process to compensate for the resources and values this project would damage or destroy. Specifically, we recommend that BLM designate Areas of Critical Environmental Concern and Special Recreation Management Areas with a backcountry emphasis to mitigate the losses of Greater sage grouse and other wildlife habitat as well as to mitigate the loss of wilderness quality lands

---

[1] http://www.doi.gov/news/pressreleases/secretary-jewell-releases-landscape-scale-mitigation-strategy-to-encourage-dual-objectives-of-smart-development-and-conservation.cfm

[2] P.9 *A Strategy for Improving the Mitigation Policies and Practices of The Department of the Interior*

Response(s)

SI1cp See response to Comment SI1ah.

	Comment(s)	Response(s)
SI1	**Audubon Rockies et. al (cont.)**	
SI1cp	that provide unique opportunities for solitude and primitive and unconfined recreation. These designations should also include strong management prescriptions adequate to protect the wilderness characteristics and other values lost in the impacted areas, including preventing uses that would damage wilderness characteristics and other values in the ACECs and SRMAs designated as mitigation.	
	Below is the list of lands with wilderness character units that would be detrimentally effected by the preferred alternative. Some of the units were found to contain wilderness character whole or in part by BLM and all units contain outstanding recreation and wildlife values. **V. Specific Unit Notes on Potentially Impacted LWC Units** **a) WYCO-B and WYCO-B-2**	
SI1cq	• **Upper Little Snake**: BLM found 11,459.08 acres of this unit to meet the LWC criteria. The agency preferred and applicant proposed route would nearly bisect this unit. The unit provides outstanding opportunities for solitude as well as primitive and unconfined recreation and the high relief topography of the unit lends itself to sweeping views of the Little Snake River Valley and Great Divide area. In addition, the unit provides precious public access to the Little Snake River. ○ Wildlife: The unit overlaps with severe winter range and winter concentration areas for elk, mule deer, and pronghorn, which is a rare occurrence in northwest Colorado. Additionally, the eastern half of the unit and scattered areas in the western half contain Preliminary Priority Habitat (PPH) for Greater sage grouse (GSG).	As specified in Manual 6310, if an individual or group has information to be considered in the determination of wilderness characteristics, a written proposal describing additional wilderness characteristics must be submitted to the applicable BLM field office for review. In addition, impacts by an alternative route or route variation on elk, mule deer, pronghorn, and greater sage-grouse habitat are described in Section 3.2.7 and 3.2.8.
SI1cr	• **West Sevenmile:** BLM found 6,326.24 acres of this unit to meet the LWC criteria. BLM states that the "large stepping elevation changes seem to isolate one plateau from another both visibly and audibly"; that "the deep canyons are extremely visually-segregated from the rest of the unit"; and that "[t]he area's unique topography and high relief offer a plethora of opportunities for camping, hiking, and hunting". The BLM cites the "spectacular visual appeal" of the unit. While the applicant/agency-proposed route would only clip the southeastern portion of this unit, and the Agency-preferred would cut across the lowest portion of the unit, both of these routes could severely impact the outstanding wilderness characteristics cited by BLM, especially the visual resources.	See response to Comment SIcq.
SI1cs	• Wildlife: The unit is both a mule deer and elk winter concentration area as well as elk production areas. Mule deer migrate through the unit from Sevenmile Ridge to the Little Snake River. PPH for Greater sage grouse exists at the upper elevations	Impacts on big game and greater sage-grouse along Alternative WYCO-B are disclosed in Sections 3.2.7.5.4 and 3.2.8.5.4. Route Variations are discussed in Appendix F. Impacts on the inventoried wilderness characteristics of West Sevenmile are disclosed in Section 3.2.16.4.2. The BLM's process for inventorying non-wilderenss study area lands with wilderness characteristic units and its planning analysis and management decision (i.e., as to whether the area will be managed for those characteristics or for other priority multiple uses) is beyond the scope of the project-level EIS. All BLM field offices were contacted during preparation of the Final EIS for any updates to inventories of lands with wilderness characteristics. The information in the EIS includes the most current information. In general, the need for additional public land to be designated for conservation management could be considered in future RMP revisions, but is not appropriate for a project-level evaluation. No additional special management areas are proposed as part of this Project, and as such, development of management plans for special designation areas is beyond the scope of this project. Development of management plans for non-WSA lands with wilderness characteristics also is beyond the scope of this Project.
SI1ct	• **Spence Gulch:** BLM found 5,358.61 acres of the Spence Gulch unit to meet LWC criteria according to the map and spreadsheet found in BLM's inventory. However the inventory write-up (produced by AECOM) says the area doesn't meet LWC criteria	See response to Comment SI1cq.

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1ct because it fails to meet the size criteria. This discrepancy isn't addressed in either the narrative or the DEIS for this project. No photos are included in the BLM's inventory for this unit (just a photo log). However, BLM does note that "expansive views and scenery are present"; "the area is quiet with no anthropogenic sounds or visible manmade objects in the area"; "elk bugling was observed" [sic]; and, "excellent opportunities for primitive and unconfined recreation are available throughout the entire unit." BLM specifically mentions that "[s]cenic values exist throughout the unit due to the vastness of the landscape, deep valley cuts, and prominent dipping mesas". The agency/applicant proposed route would cut through the southeastern corner of the unit and would impact wilderness characteristics.

  - Wildlife: The BLM's inventory mentions that the unit is "excellent habitat for game, wild horses, elk, and antelope". CPW data shows that the entire unit is winter concentration area for elk and that elk production areas exist at the higher portions of the unit along Sevenmile Ridge. Mule deer utilize the entire unit for winter concentration areas and greater sage grouse PPH exists in upper and lowest elevations of the unit, with the proposed route directly impacting PPH.

SI1cu

- **Lower Little Snake:** BLM found 7,335.96 acres of this unit to meet LWC criteria. It's noted that the unit contains high relief topography in the western portion of the unit providing expansive views in addition to solitude and outstanding opportunities for primitive and unconfined recreation, particularly backcountry hunting. While both the agency proposed and applicant preferred routes would impact the wilderness characteristics of the unit, Route Variation WYCO-B-1 is especially damaging to wilderness character and wildlife habitat. At S-7, the DEIS states "This route variation is east of Alternative WYCO-B for a distance of approximately 5 miles, limiting land-use conflicts by crossing the Little Snake River north of where Alternative WYCO-B crosses the river." The only "land-use conflicts" this statement can possible be referring to is conflicts between the developer and private landowners because this variation dramatically increases impacts to wilderness characteristics in both the Lower Little Snake and Deep Canyon LWC units.
  - Wildlife: This unit parallels and includes public land sections of Little Snake River. Little Snake is a free-flowing river that is one of the most important wildlife areas in the entire Little Snake Field Office. The Little Snake River has only intermittent public access, so areas where public lands exist on both sides of the river are highly valued by sportsman and other recreationists. There is a substantial amount of Greater sage grouse PPH throughout this unit.

SI1cu See response to Comment SI1cq.

SI1cv

- **Deep Canyon:** The BLM found 10,974.55 acres of this unit to meet LWC criteria. We submit that all 14,200 acres meet LWC criteria as the western boundary proposed by BLM is not a Wilderness Inventory Road according to BLM's own policies. The Deep Canyon unit is likely the most visually stunning LWC in the Little Snake River valley and is a priority for conservation groups. Godiva Rim is one of the most prominent

6 **Appendix B: CO Routes**

SI1cv See response to Comment SI1cq.

Comment(s)	Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1cv

features in northwest Colorado, visible from locations throughout Moffat County. Both the agency preferred route and the applicant's route variation would have significant impact to the wilderness character of the unit, with the applicant's route variation nearly running the entire length of the unit. If sited within the unit, Gateway South would have significant impacts to a unit which is evidenced by the description of the unit in the AECOM/BLM inventory, "majority of the unit contains beautiful downward slopes dipping to the northwest from Godiva rim"…with deep valleys and creek beds throughout the south and central portions of the unit". The report details the "vast and expansive natural views from Godiva Rim and areas to the north and south"; significant areas of solitude"; "opportunities of primitive and unconfined recreation exist, including camping, hunting, hiking and wildlife observation"; and "expansive nature provides a feeling of being one with nature". The BLM inventory includes relatively expansive narrative on supplemental values including "excellent habitat for big game"; "scenic values" and "unique vistas"; "deep canyons and resistant sedimentary layers are visible throughout the unit". The area is a well-known hotspot for big game hunters in addition to other recreationists throughout the year.

  - Wildlife: Elk utilize Godiva Rim for winter concentration and severe winter ranges. In addition, the uppermost elevations of Godiva Rim are elk production areas. Mule deer migrate across and below the rim on the northern side and the lower elevations of the unit are winter concentration and severe winter ranges for mule deer. Pronghorn utilize the very lowest elevations of the unit around the Little Snake River for winter concentration and severe winter range. The unit also contains pockets of mapped PGH for greater sage grouse.

SI1cw

- **Simsberry Draw:** BLM found 6,346.56 acres of this unit to meet the LWC criteria. The BLM's inventory mentions that the "Godiva Rim… is the prominent geological feature in the area"; and that the "[s]cenic values include the unique and substantive views of the surrounding region, which dominate the landscape…including Godiva Rim and its spectacular backdrop for steep sloping expanses of beautiful valley vistas". The inventory also mentions the current "absence of anthropogenic impacts and overall scenery of the unit also contribute to solitude"; and that outstanding opportunities for primitive and unconfined recreation exist "due to its route accesses, beautiful scenery, and evidence of wildlife and hunting opportunities, as well as providing areas for seclusion". The applicant and agency proposed route would largely bisect the unit, creating a bevy of impacts to wilderness character, wildlife habitat and recreation opportunities.
  - Wildlife: The southern parts of the unit are mapped PPH for sage grouse, while the rest of the unit is mapped PGH. The entirety of the unit is elk production area, elk severe winter range, and winter concentration area for elk. And mule deer use the area as winter concentration and severe winter range.

SI1cw See response to Comment SIcq.

SI1cx

- **Cross Mountain Wilderness Study Area Adjacent (CON-010-A36, CON-10-A33:** BLM has not conducted inventories of the WSA adjacent units and needs to do so before any projects are approved that would degrade wilderness characteristics of the unit. This

SI1cx See response to Comment SI1aq.

	Comment(s)	Response(s)
SI1	**Audubon Rockies et. al (cont.)**	
SI1cx	unit contains significant amounts of Greater sage grouse PPH and the proposed route may also be injurious to conservation easements on private land as well as possibly the Cross Mountain Canyon Ranch which was recently acquired by the BLM to provide for enhanced recreational access to the Yampa River and the Cross Mountain Wilderness Study Area. Additionally, these two units contains significant amounts of Greater sage grouse PPH acreage that would be directly threated by the proposed route.	
SI1cy	• **Anthill Draw:** BLM found 7,600 acres of this unit to meet the LWC criteria. However the BLM's inventory reports that the boundary has been drawn in such a way to "buffer away from noise". BLM Manual 6310 clearly states that, "[w]hen establishing the boundary, do not create a setback or buffer from the physical edge of the imprint of man". In addition, BLM Manual 6310 also states that "Human impacts outside the area will not normally be considered in assessing naturalness of an area". Contrary to the BLM's report, the outside impacts to the Anthill Draw unit are not in any way "major" and do not have direct effects on the apparent naturalness or opportunities for solitude inside of the unit. BLM states that this unit has "excellent" opportunities for unconfined recreation. The applicant/agency proposed route would bisect this unit on a southwest/northeast aspect, creating significant negative impacts for the unit's wilderness character, wildlife and recreation opportunities. • Wildlife: The Anthill Draw unit overlaps with some mapped winter concentration and severe winter habitat for mule deer and the entire unit is mapped as Preliminary General Habitat for greater sage grouse.	See response to Comment SI1cq.
	b) WYCO-D-1	
SI1cz	• **Little Yampa:** BLM found 14,800 acres to contain wilderness characteristics. This area overlaps with the Yampa River Citizen's Wilderness Proposal area (CWP). The unit sits on both sides of the Yampa River and the river through this unit offers one of the premier flatwater canoeing trips in the state of Colorado. The unit offers outstanding camping, hiking, and hunting opportunities. Most of the unit overlaps with the existing Little Yampa Canyon Special Recreation Management Area (SRMA)—a unit that was created to manage for its outstanding recreational opportunities. Impacts to this unit could easily be eliminated by locating the line just slightly north to avoid the LWC unit.	Comment noted. The alternative route that crosses the Little Yampa Canyon non-WSA lands with wilderness characteristics area is paralleling two existing transmission lines, the Bears Ears to Bonanza 345-kilovolt transmission line and the Hayden to Artesia 138-kilovolt transmission line. Both of these existing transmission lines already cross the northern portion of this unit; and with the need for 1,500 feet of separation for reliability standards for the Project, the alternative route cannot be shifted outside of the unit. Furthermore, the alternative route could be shifted to the north of the existing transmission lines due to existing land uses.
SI1da	• **Juniper Mountain:** Currently managed as part of the Little Yampa Canyon Special Recreation Management Area, this unit is bisected by the Yampa River and acts in concert with the Little Yampa LWC unit in providing a multi-day boating experience. The area also offers outstanding camping, hiking, fishing and hunting opportunities in close proximity to Craig. Impacts to this unit could be largely mitigated by locating the line to the north of the unit, avoiding needless impacts to the LWC unit and the SRMA.	Comment noted. Due to existing land uses including residential, oil/gas development, and recreation areas and a conservation easement (Maybell Tract), the alternative route cannot be located to the north of the unit. In addition, according to the BLM Little Snake Field Office worksheet for Juniper Mountain, this unit was determined to not meet the standards for an inventoried land with wilderness characteristics unit because of its size.
SI1db	• **Crooked Wash:** BLM found 13,391.12 acres of this unit to meet LWC criteria. BLM found this unit to provide naturalness and solitude stating "[T]his unit contains many high ridgelines and valleys below that eliminate both noise and visual evidence of outside activity…and [t]he expansive views show natural habitat." The area was also deemed	See response to Comment SI1cq.

8 **Appendix B: CO Routes**

Comment(s)

Response(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1db

outstanding for primitive and unconfined recreation with BLM remarking "The unit provides excellent opportunities for primitive recreation due to the size and topography of the unit, such as hunting, camping, hiking, and wildlife observation." Route WYCO-D-1 just clips the northern-most portion of the unit that was deemed to not contain wilderness character and potentially impacts to the wilderness character, recreation opportunities and wildlife habitat could be addressed through micro-siting.

SI1dc

- **Coal Oil Gulch:** BLM found 13,000 acres to meet the LWC criteria. BLM stated "The majority of this unit provides areas for solitude…due to its vast expanses, deep canyons, beautiful vistas and lack of proximity to human development." The proposed route corridor would only intersect the very northern-most portion of the unit and could easily be addressed through micro-siting.

SI1dc Response: See response to Comment SIcq.

VI. **Proposed Mitigation Actions**

SI1dd

To mitigate the detrimental impacts to those lands with wilderness character units as well as Greater sage grouse and other wildlife habitat, we recommend that BLM designate the following LWC units as ACEC's and/or SRMA's.

a) **Specific Unit Notes**

- **Shaffer Draw:** The BLM found 5.971.54 acres of this unit to contain wilderness character. Beyond meeting the criteria for naturalness and providing outstanding opportunities for solitude and primitive and unconfined recreation, the area contains important wildlife habitat. Nearly 100% of the unit contains sage grouse PPH in addition to important big game habitat.
- **Upper Little Snake:** As mentioned in the above section, the Upper Little Snake LWC unit contains outstanding wilderness characteristics in addition to a sizable amount of sage grouse PPH. BLM can best address the impacts from the proposed project by protecting those values in the unit outside the transmission line corridor and managing that area of the unit to protect its wilderness character.
- **Deep Canyon:** As mentioned in the above section, Deep Canyon and the Godiva Rim area have some of the most obvious and spectacular wilderness characteristics of any LWC unit in the area. BLM can best address the impacts from the proposed project by protecting those values in the unit outside the transmission line corridor and managing that area of the unit to protect its wilderness character.
- **Greasewood Gulch:** BLM found 8,129.98 acres of this unit to meet the LWC criteria. BLM states "The unit is expansive and rolling terrain both contribute to the overall feeling of solitude." In addition to the fact that the unit "provides excellent hunting opportunities. Both hikers and horseback riders could traverse the unit with ease." The entire unit contains Greater sage grouse PPH, providing critical breeding, nesting and brood rearing habitat in addition to excellent big game habitat.
- **Cherokee Draw:** BLM found 9,639.74 acres of this unit to meet the LWC criteria. Bordered by both the Wyoming/Colorado state line to the north and the Little Snake

SI1dd Response: See response to Comments SI1ah and SI1cq.

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

River to the east, this unit provides a wealth of wildlife habitat and recreation opportunity. The area around the confluence of Powder Wash and the Little Snake River is especially unique with a "badlands" like environment and the area provides ample opportunities for solitude while providing relative ease of access.

- **Dry Gulch:** BLM did not find this area to meet the LWC criteria due to "range routes." While photo points are provided in the inventory, unfortunately there is no route determination forms or any analysis to support this conclusion. However, the unit's most important feature is its high-quality sage grouse habitat, with nearly 100% of the unit containing sage grouse PPH. The area is also contains important big game winter range and is a well-known destination for hunters.
- **Thornburgh Gulch:** BLM did not find this area to meet the LWC criteria due to "Evidence of this is the numerous routes that traverse the area. While they may not qualify as Wilderness Inventory Roads, the routes severely detract from the overall naturalness of the area." However, there is no route determination form or analysis provided to substantiate this conclusion. However, as with Dry Gulch, the unit's most important feature is its high-quality sage grouse habitat, with 100% of the unit containing sage grouse PPH.
- SI1dd **Pole Gulch:** BLM did not find this area to meet the LWC criteria stating "Primitive routes cross the entire unit leading to a heavily impacted polygon. On the state land surrounded by the area, there is an abandoned fuel tanker trailer. This affects the view shed of a large part of the unit and detracts from naturalness." There are no route determination forms provided, so details of whether or not the "primitive routes" cited meet the definition of Wilderness Inventory roads is unknown. Additionally, the report states that there is an abandoned fuel tanker on adjacent state land, which is in direct contradiction with BLM Manual 6310 that states "Human impacts outside the area will not normally be considered in assessing naturalness of an area..." However, the most outstanding feature of Pole Gulch is the Greater sage grouse habitat possessed, with 100% of the unit containing PPH in addition to its prime mule deer habitat.
- **Timberlake Creek:** BLM did not find this area to meet LWC criteria because of ranching activities and oil and gas infrastructure. However, 100% of the area is Greater sage grouse PPH, containing the largest lek in the state of Colorado as well as some of the best mule deer habitat found in the region. The ecological importance of this along with the other units adjacent (Dry, Thornburgh and Pole Gulches) is significant and managing these units with an emphasis on Greater sage grouse conservation is critical for the future of the species in Colorado.

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

APPENDIX C:

Utah State
Detailed Analyses of
Route Segments

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

APPENDIX C: Utah State Detailed Analyses of Route Segments

I. Overview

Federal public land in Utah constitutes some of the most awe-inspiring, breathtaking landscapes in the world. These lands provide critical habitat for innumerable plant and animal species, effectively buffering those species against the encroachment of human development and climate change. Rich in ecological diversity and cultural resources tracing back tens of thousands of years, these lands are a national treasure that should be protected for all future generations. Through this lens, we submit the following comments on the proposed alternative routes developed as part of the Gateway South transmission project.

Of particular concern to Utah conservation interests are those alternative routes that impact lands proposed for wilderness designation by the Utah Wilderness Coalition in America's Red Rock Wilderness Act (ARRWA), S.769, H.R. 1630 (113th Congress); alternative routes that impact Forest Service inventoried roadless areas (IRAs) and otherwise undisturbed landscapes; and alternative routes that impact wildlife habitat, lands with wilderness characteristics (LWCs), and other specially-designated federal lands (*e.g.,* Areas of Critical Environmental Concern (ACECs), National Conservation Areas (NCAs), Wilderness areas). *See* Map UT-1.

As described in further detail below, a primary issue with many of the proposed alternative routes is that the respective routes, as currently proposed, encroach upon proposed wilderness areas, BLM LWCs, BLM ACECs, suitable Wild and Scenic River segments, Forest Service IRAs, and priority habitat for Greater sage grouse. *Id.* Where a proposed route passes near these landscapes, the right-of-way should be modified and the actual route aligned to avoid entering or overlapping with these critical areas.

II. Co-locating Transmission Projects

SI1de

Particular segments of the proposed alternative routes fall within existing transmission corridors containing existing transmission lines. In these situations, BLM must analyze co-locating the Gateway South transmission line in order to minimize adverse environmental impacts. This co-location analysis applies both singularly to Gateway South as well as in conjunction with the two additional statewide transmission projects currently undergoing environmental review (*e.g.,* Transwest Express and Zephyr).

III. Off-Road Vehicle Use

SI1df

Both the Utah BLM and Forest Service suffer from similar problems in that both agencies fail to adequately manage off-road vehicle (ORV) use. Whether it's the proliferation of ORV use, lack of agency will, cutting of agency budgets or the endless miles of dirt roads and two-tracks throughout Utah, ORV use presents a significant challenge for conservation of public lands in the state. Increased route densities from ORV trails and dirt roads directly conflict with key wildlife habitat. As part of mitigating any new transmission project, BLM must consider route density reductions in some areas in conjunction with particular line segment siting. Any route constructed as part of the Gateway South transmission project may end up added to the

Response(s)

SI1de

Between preparation of the Draft EIS and the Final EIS, the BLM asked the Applicant to make further refinements based on comments received on the Draft EIS. The Applicant refined the alternative routes along the preliminary agency-preferred alignment and incorporated some localized alternative routing variations. Refinements included coordination with the applicant for the TransWest Express transmission project to identify opportunities for colocation of the two projects through several priority areas along the agency-preferred alternative alignment. The refined alignment along the agency-preferred alternative route and the other alternative routes are analyzed in the Final EIS.

In addition, in 2013, the WECC revised its guidelines regarding separation distance between high-voltage transmission lines to be a minimum of 250 feet. The alternative routes and route variations for the Project were analyzed in the Draft EIS assuming a greater separation distance of 1,500 feet, based on earlier 2008 WECC guidance. Considering the revised WECC guidance, in early 2014, the BLM asked Applicant to adjust the transmission line alignment along the Agency Preferred Alternative to be approximately 250 feet from existing linear facilities and 300 feet from other proposed transmission line alignments, where applicable. The BLM's intent is to reduce the amount of potential impacts and avoid potential proliferation of transmission lines across the landscape in accordance with the Federal Land Policy and Management Act of 1976. The alternative routes for the Project are analyzed in the Final EIS assuming a separation distance of 250 to 300 feet from the TransWest Express transmission project.

SI1df

As described in Section 2.3.3, existing access roads would be used in their present condition without improvements, to the extent possible, to limit new disturbance for the Project. In areas where it is not practicable to use existing roads to fulfill the access requirements of the Project, the existing road would be upgraded or a new road would be constructed. Upgraded or new access roads would be evaluated on a case-by-case basis by the appropriate federal or state land manager to determine whether to close roads to the public, close and reclaim roads, or leave roads open as part of a transportation network. The EIS acknowledges that closed roads may attract unauthorized off-highway vehicle use and associated impacts on resources. Where appropriate, Selective Mitigation Measures 5 and 15 (refer to Table 2-13) would be applied to minimize accessibility of reclaimed access routes and to limit accessibility in sensitive habitats. In addition, where the Project and the TransWest Express transmission project are colocated, if applicable (refer to Section 2.3.3 of the Final EIS), the requirements for access roads may be consolidated, if conditions are appropriate to reduce resource impacts.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1df system of unauthorized ORV trails in Utah. Recognizing that route restrictions such as "administrative only" are difficult to enforce, BLM must analyze and recommend policies to deter and prevent creation and use of additional routes resulting from the proposed project.

IV. Wildlife Impacts

SI1dg BLM must consider impacts to wildlife species and habitat and avoid impacting priority habitat areas in siting the proposed transmission structures. These critical species include the Greater sage grouse, goshawk, prairie dog, black-footed ferret, Mule deer, Rocky Mountain elk and Rocky Mountain bighorn sheep. The primary issue in much of eastern Utah, where a significant amount of habitat has already been compromised, is "what will a new major impact bring?" Analysis must consider the adequacy of existing habitat to support viable populations of key species as well as options to restore or protect habitat. Where habitat is currently compromised, resiliency for key species and movement to allow adaptation must be ensured before adding any additional impacts. Additionally, BLM must consider the issue of unwanted increased predation resulting from transmission towers. Each tower can lead to a zone of several miles where increased predation can lead to major declines in ground dependent wildlife species such as sage grouse.

V. Specific Alternative Routes

The following comments outline specific concerns with the alternative route segments set out in the DEIS.

Alternative Routes COUT-BAX-B/COUT-BAX-C/COUT-BAX-E

Alternative routes COUT-BAX-B, COUT-BAX-C, and COUT-BAX-E (hereafter referred to as the "southern Utah routes") all pass through BLM LWCs and lands proposed for wilderness designation in ARRWA. In addition, all but COUT-BAX-E negatively impact the

SI1dh existing San Rafael Swell SRMA. *All proposed southern Utah routes result in unnecessary impacts to BLM LWCs, proposed wilderness, and/or other specially-designated areas and should not be considered viable alternatives in the DEIS.*

- **LWC/ARRWA/ACEC Impacts**

All proposed southern Utah routes bisect BLM identified LWCs. In particular, the following impacts will result from the routes as proposed:

- All southern Utah routes bisect the southern portion of the Floy Canyon LWC unit.
- COUT-BAX-B cuts into the southwest boundary of the Lost Spring Wash LWC unit.
- COUT-BAX-C bisects the northern boundary of the Lost Spring Wash LWC unit as well as the southern boundary of the Price River LWC unit.

In addition to impacting LWCs (*see* DEIS 3.2.14), the following routes impact lands proposed for wilderness in ARRWA:

- COUT-BAX-B impacts the Desolation Canyon, Lost Spring Wash and Price River proposed wilderness units. *See* Map UT-2.

Response(s)

SI1dg BLM went through an extensive process in identifying alternative routes and route variations to avoid impacting priority habitat areas. Several alternative routes and route variations were eliminated from further consideration early on in the planning process based on potential impacts on wildlife species (refer to Section 2.6.2). Impacts on wildlife will be further reduced under the Agency Preferred Alternative by colocating the route with existing transmission lines and TransWest Express, another planned transmission line project. For all alternative routes and route variations carried forward in the Draft EIS, BLM analyzed potential direct and indirect impacts on wildlife, including greater sage-grouse, Northern goshawk, white-tailed prairie dog, black-footed ferret, mule deer, elk, and bighorn sheep in Sections 3.2.7 and 3.2.8.

Increased predation resulting from transmission towers will be minimized by colocating the line with existing or proposed transmission lines to the extent feasible, which will reduce the proliferation of perch sites in new areas across the landscape.

SI1dh Impacts on the San Rafael Swell Special Recreation Management Area are described in Section 3.2.12; ACECs are described in Section 3.2.15; and non-WSA lands with wilderness characteristics are described in Section 3.2.16.

See also response to Comment SI1aq.

Comment(s)

SI1 **Audubon Rockies et. al (cont.)**

SI1dh

- Route COUT-BAX-C impacts the Desolation Canyon, Lost Spring Wash, Price River, and Mexican Mountain proposed wilderness units. *Id*.
- Route COUT-BAX-E impacts the Desolation Canyon and Price River proposed wilderness units. *Id*.

Finally, route COUT-BAX-B bisects the Big Hole unit of the Rock Art ACEC, designated for the protection of known cultural sites. Price Field Office RMP, 133-34. The sites included within this ACEC "are some of the best examples of prehistoric rock art in the Colorado Plateau." *Id.* at 133. Importantly, in accordance with the RMP, the Rock Art ACEC is designated an "exclusion area" for utility corridors and ROWs. *Id.* at 40, 120, 133-34.

- **SRMA Impacts**

Both COUT-BAX-B and COUT-BAX-C transect the San Rafael Swell SRMA. *See* Price Field Office Record of Decision and Approved Resource Management Plan, 110 (October 2008). The existence of the Gateway South transmission line will negatively impact the recreation values protected by the SRMA.

Alternative Routes COUT-C1 through C5/COUT-H/COUT-J

Alternative routes COUT-C1 through C5, COUT-H, and COUT-J all result in impacts to a BLM-identified LWC and ACEC. *See* Map UT-3.

- **LWC Impacts**

SI1di

All of the above listed routes will result in detrimental impacts to the 14,434-acre Currant Canyon LWC unit, identified by BLM's Vernal Field Office as part of the 2008 RMP revision. *See, generally,* Vernal Field Office Record of Decision and Approved Resource Management Plan (October 2008). The proposed routes bisect the LWC unit and will result in a loss of identified wilderness characteristics. As generally discussed in the Colorado-specific comments, in order to mitigate the detrimental impacts to the Currant Canyon LWC unit, we recommend that BLM manage other areas found to possess wilderness characteristics for those wilderness characteristics (*i.e.,* natural areas) or, alternatively, designate them as ACECs or SRMAs. *See Appendix B.*

Specifically, to mitigate for the loss of wilderness characteristics in the Currant Canyon LWC unit, BLM should manage the 50,280 acre Four Mile Wash LWC unit for its wilderness characteristics or, alternatively, designate the area an ACEC for its scenic values and riparian habitat. The 2008 Vernal RMP already determined that the area possesses wilderness characteristics and was suitable for analysis as an ACEC.

Given that wilderness character lands cannot be "created" in the same context as wetlands mitigation, BLM is obligated to manage existing wilderness character lands for those wilderness characteristics or, alternatively, under other special designations, as mitigation for decimating existing wilderness characteristics. Further, the close proximity of the Four Mile Wash LWC unit to the Currant Canyon LWC makes for a common sense, sufficient mitigation

Response(s)

SI1di See response to Comment SI1aq.

SI1 Audubon Rockies et. al (cont.)

	Comment(s)	Response(s)
SI1di	strategy to compensate for the loss of habitat and wilderness values resulting from BLM's transmission siting decision. This approach is consistent with the recently issued "Strategy for Improving the Mitigation Policies and Practices of The Department of the Interior" (April 2014), and adequately mitigates for the loss of wilderness characteristics in the Currant Canyon LWC unit. • **ACEC/Wild and Scenic River Impacts**	
SI1dj	The proposed alternative routes also cross the 8,470-acre Lower Green River Corridor ACEC. Vernal RMP, 120. The Lower Green River Corridor ACEC is intended to protect the visual resources of the area and, as such, is managed as a VRM Class II area. VRM Class II management "requires that the level of change to the landscape be low. . . . [and] [a]ctivities can be seen but should not attract the attention of the casual observer." *Id.* at 31. Siting the transmission line within the Lower Green River Corridor ACEC is inconsistent with VRM Class II management and will result in detrimental impacts to the scenic values the ACEC seeks to protect. In addition, the 30-mile Lower Green River segment bisected by the proposed alternative routes is classified as a suitable "Scenic" river under the Wild and Scenic River Act. *Id.* at 43. Per the 2008 Vernal RMP, the Lower Green River segment "will continue to be managed as previously recommended as a suitable scenic segment to protect its outstanding remarkable values." *Id.* at 124. Any siting of the transmission line across this segment of the Green River will result in loss of the scenic qualities within this river segment and may remove its eligibility for designation into the National Wild and Scenic River System. • **Greater Sage Grouse Impacts**	Comment noted. Per the approval from the BLM Vernal Field Manager on August 27, 2014, the alternative route has been refined and is located in the utility corridor where it crosses the Lower Green River eligible wild and scenic river/area of critical environmental concern but avoids the pipelines on the west side of the river. This keeps utility crossings to just one portion of the river.
SI1dk	Prior to diverging from the primary east-west route, yet located west of the Currant Canyon LWC unit, all of the proposed routes pass through Greater sage grouse habitat with a breeding density of 100%. *See* Map UT-4. • **Specific Route Impacts (after diverging from the primary east-west route)** ○ **COUT-C1**	Greater sage-grouse habitat crossed by the Project is discussed in Section 3.2.8.
SI1dl	Proposed route COUT-C1follows Reservation Ridge, a high ridgeline with the potential for both impacts to high-quality avian habitat and visual resource values. Although the route avoids direct impacts to the Forest Service IRA, transmission structures near the IRA will result in increased predation and other negative impacts to avian species that utilize the high-quality adjacent IRA habitat. Reservation Ridge is also a ridgeline where any transmission siting will have far greater impacts to visual resources than lower elevation alternative routes where the transmission structures can be more easily screened from view. 4 **Appendix C: UT Routes**	High impacts on views from the Reservation Ridge Scenic Backway were assessed for the approximately 12 miles where this scenic road is paralleled along the edge of the Ashley National Forest. Due to these impacts, and other resource effects, this route variation was not selected to be the Agency Preferred Alternative. Impacts on greater sage-grouse along Alternative COUT-C and route variations are disclosed in Section 3.2.8.5.4. Impacts on greater sage-grouse along route variations are disclosed in Appendix F. Potential impacts in sage-grouse habitats along all alternative routes and route variations will be minimized through the application of the design features and selective mitigation measures (refer to Mitigation Planning and Effectiveness in Section 3.2.8.4.3 and Table 3-102). High residual impacts on sage-grouse habitat remaining after application of the design features and selective mitigation measures will be addressed via offsite mitigation as described in Appendix K.

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)

SI1dl

Additionally, this route passes through areas with a Greater Sage grouse breeding density of 75%.

- **COUT-C2 through COUT-C3**

Proposed route COUT-C2 and COUT-C3 will negatively impact Greater sage grouse habitat with a breeding density of 75%. In addition, both routes slightly impact the boundary of habitat areas with a breeding density of 50%.

- **COUT-C4/COUT-C5/COUT-H/COUT-I**

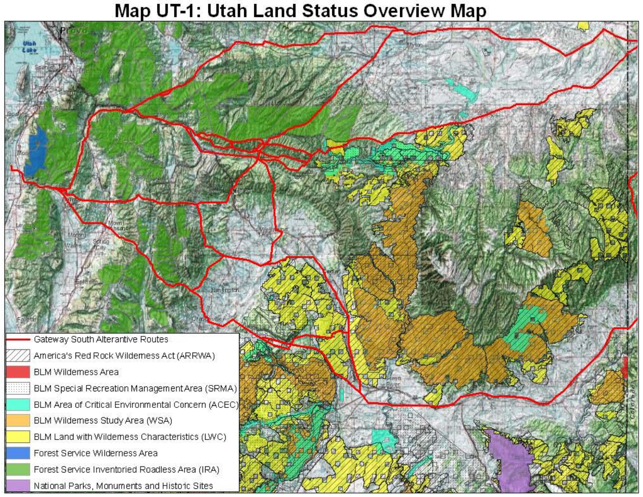
Proposed routes COUT-C5, COUT-H and COUT-I all result in unacceptable impacts to Greater sage grouse habitat. This area bisected by these three routes has been determined to be a priority Greater sage grouse conservation area and, as indicated on Map UT-4, has a grouse breeding density of 25%. Due to the imperiled status of the Greater sage grouse and the impact of transmission structures on grouse habitat, the Gateway South transmission line must avoid these key habitat areas.

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)



Map UT-1: Utah Land Status Overview Map

Gateway South Alterantive Routes
America's Red Rock Wilderness Act (ARRWA)
BLM Wilderness Area
BLM Special Recreation Management Area (SRMA)
BLM Area of Critical Environmental Concern (ACEC)
BLM Wilderness Study Area (WSA)
BLM Land with Wilderness Characteristics (LWC)
Forest Service Wilderness Area
Forest Service Inventoried Roadless Area (IRA)
National Parks, Monuments and Historic Sites
Utah Lake

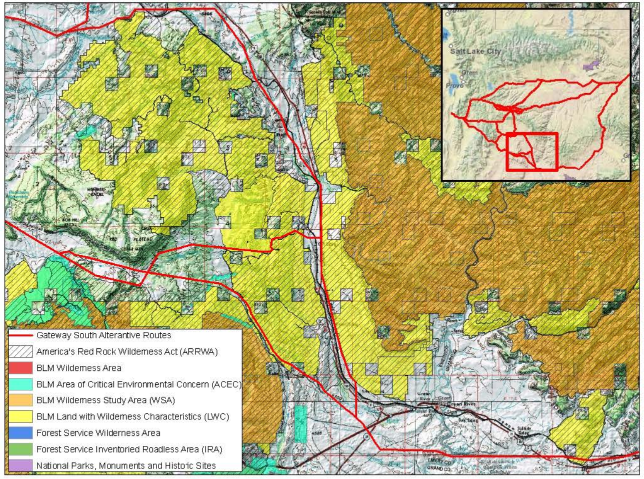
6 **Appendix C: UT Routes**

Comment(s)

Response(s)

SI1

Audubon Rockies et. al (cont.)



Map UT-2: UTCO-BAX Route Conflicts

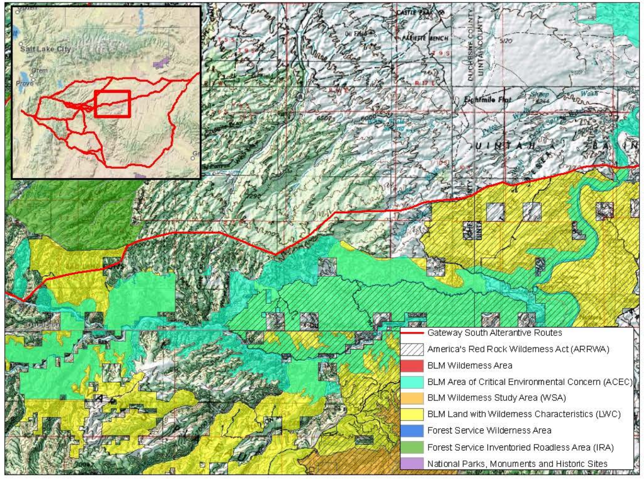
Salt Lake City
Orem
Provo
Gateway South Alternative Routes
America's Red Rock Wilderness Act (ARRWA)
BLM Wilderness Area
BLM Area of Critical Environmental Concern (ACEC)
BLM Wilderness Study Area (WSA)
BLM Land with Wilderness Characteristics (LWC)
Forest Service Wilderness Area
Forest Service Inventoried Roadless Area (IRA)
National Parks, Monuments and Historic Sites

Comment(s)

Response(s)

SI1 | **Audubon Rockies et. al (cont.)**

Map UT-3: UTCO-C1 through C5, UTCO-H, UTCO-J Route Impacts

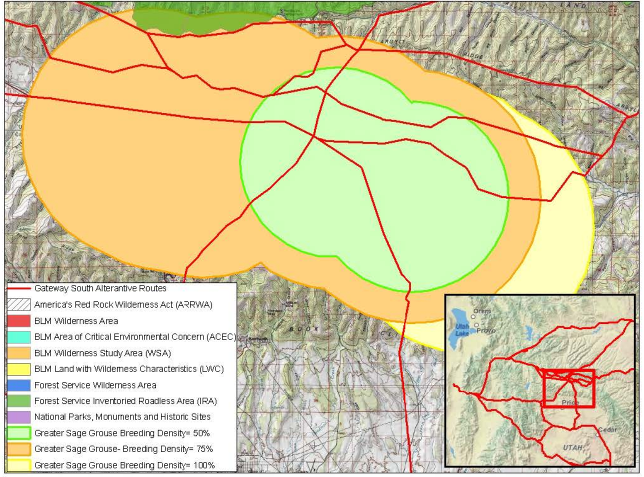

Salt Lake City
Provo
Castle Peak
Eightmile Flat
DUCHESNE COUNTY
UINTAH COUNTY
UINTAH BASIN
Gateway South Alternative Routes
America's Red Rock Wilderness Act (ARRWA)
BLM Wilderness Area
BLM Area of Critical Environmental Concern (ACEC)
BLM Wilderness Study Area (WSA)
BLM Land with Wilderness Characteristics (LWC)
Forest Service Wilderness Area
Forest Service Inventoried Roadless Area (IRA)
National Parks, Monuments and Historic Sites

Comment(s)

Response(s)

SI1 | **Audubon Rockies et. al (cont.)**

Map UT-4: UTCO-C1 through C5, UTCO-H, UTCO-J Route Impacts


Gateway South Alterantive Routes
▨ America's Red Rock Wilderness Act (ARRWA)
🟥 BLM Wilderness Area
🟦 BLM Area of Critical Environmental Concern (ACEC)
🟧 BLM Wilderness Study Area (WSA)
🟨 BLM Land with Wilderness Characteristics (LWC)
🟦 Forest Service Wilderness Area
🟩 Forest Service Inventoried Roadless Area (IRA)
🟪 National Parks, Monuments and Historic Sites
🟩 Greater Sage Grouse Breeding Density= 50%
🟧 Greater Sage Grouse- Breeding Density= 75%
🟨 Greater Sage Grouse Breeding Density= 100%
Orem
Utah Lake
Provo
Price
Cedar
UTAH

9 Appendix C: UT Routes

Comment(s)

Response(s)

SI2 **Argyle Wilderness Preservation Corporation**

SAGE LAW
PARTNERS

997 WEST 950 NORTH, SUITE 102
CENTERVILLE, UTAH 84014

REPLY TO:
CHRISTOPHER J. FINLEY
OFFICE: (801) 438-7120
CFINLEY@SAGELAWPARTNERS.COM

CENTERVILLE, UTAH
OGDEN, UTAH
SALT LAKE CITY, UTAH
LAS VEGAS, NEVADA

May 22, 2014

VIA ELECTRONIC MAIL

Bureau of Land Management
Energy Gateway South Transmission Project
GatewaySouth_WYMail@blm.gov

RE: GATEWAY SOUTH TRANSMISSION LINE PROJECT DRAFT EIS

To whom it may concern:

I represent the Argyle Wilderness Preservation Corporation (“AWPC”), comprised of the majority of property owners in the Argyle Canyon area near Price, Utah, whose property interests are affected by the proposed Agency-preferred route of the Gateway South Transmission Project. The current Agency-preferred route as set forth in the Draft Environmental Impact Statement dated February 21, 2014, extends directly through Argyle Canyon.

SI2a The segment affecting the members of the AWPC is the U.S. Highway 40 to Central Utah to Clover, referenced in the EIS as “COUT.” More specifically, the segment of the Agency-preferred route that extends North along U.S. Highway 191 from Price and between Reservation Ridge and Argyle Ridge, as currently proposed, will cross many of the over 200 members’ property in Argyle Canyon. Each of the route variations designated COUT-B, -B-1, -B-2, -B-3, -B-4, and -B-5 each follow the same route north through Argyle Canyon.

Additionally, the COUT-C, -C-1, -C-2, and -C-3 (Agency-preferred alternative) route variations follow the Argyle Ridge heading west toward U.S. Highway 191, and cross through the members’ properties in Argyle Canyon.

SI2a Comment and route preference noted. Based on comments received on the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Sections 3.2.11 and 3.2.18.

Comment(s)

SI2 **Argyle Wilderness Preservation Corporation (cont.)**

BLM
May 22, 2014
Page 2 of 2

SI2b The EIS identifies COUT-C-4 and –C-5, which both avoid Argyle Ridge and U.S. Highway 191 north through Argyle Canyon. Each of those route alternatives accommodates the sage-grouse habitat present along Argyle Ridge. Either of these routes is just as viable as the Agency-preferred route and other route alternatives and avoids the members' properties altogether. These alternative routes

SI2c The members of the AWPC are adamantly opposed to the transmission lines touching and/or crossing any of their respective properties. Utah Code Ann. § 78B-6-504(1)(b) requires that any taking of property be "necessary for the use." Locating the transmission lines on their property is ***not reasonably necessary*** in relation to the alternative proposed locations for the transmission lines.

SI2d The members of the AWPC have long histories with the property in Argyle Canyon dating back to the late 1800s. The Agency-preferred route will disrupt the ecology and enjoyment of the property for which purpose the area was SI2e established and divided. Further, all value of the property, whether extrinsic or intrinsic, tangible or intangible, will be extinguished if the project touches or crosses the members' property.

SI2f All of Argyle Canyon, including all of the roads therein, is privately owned and maintained and is not devoted to any public use. Approval of the current Agency-preferred route or any of the route alternatives other than COUT-C-4 or –C-5 by the BLM enables an illegal taking under Utah law.

The AWPC is prepared to take whatever measures necessary to maintain the nature of Argyle Canyon as it currently exists. I sincerely hope that no action by the AWPC is necessary, but the AWPC and its members are prepared to take any legal action necessary to prevent these power lines from illegally crossing the members' property in Argyle Canyon.

I appreciate your consideration of the insurmountable damage the Agency-preferred route will cause to Argyle Canyon and the members of the AWPC and I anticipate that you will ultimately come to the conclusion that the routes proposed that cross Argyle Canyon property are neither necessary nor viable for the project.

Very Truly Yours,
Sage Law Partners LLC

/s/ Christopher J. Finley

Christopher J. Finley
Attorneys for AWPC

Cj/nc

cc: G. Everett

Response(s)

SI2b Comment and route preference noted.

SI2c Comment noted. The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing the Applicant must acquire all access permissions and permits for lands outside of their jurisdiction.

SI2d See response to Comment SI2a.

SI2e An additional section has been included in Section 3.2.22.5.2 (Impacts Common to All Alternatives) that describes the impacts to private property. Short-term impacts on nearby residents and properties as a result of the Project would include short-term disruptions during construction. These would include increased noise from construction activities and equipment, the visual presence of construction equipment, and potential traffic and congestion resulting from construction trucks and equipment accessing the right-of-way, use of local roads, and potential short-term road closures during conductor stringing. Long-term impacts on nearby residents as a result of operation of the Project would include low, infrequent disturbance during any maintenance or repair activities (property values are discussed in the subsequent section).

New rights-of-way for the construction and maintenance of the new transmission line would be required for the Project. Existing access roads would be used where possible, but additional access road easements would also need to be acquired. The Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. The Applicant would also compensate landowners for any lost agricultural values.

The appraisals may reference studies conducted on similar properties to support their conclusions. The strength of any appraisal depends on the individual analysis of the property, using neighborhood-specific market data to determine market value. The easements required may encumber the right-of-way area with land-use limitations. Each transmission line easement will specify the present and future right to clear the right-of-way and to keep it clear of all trees, whether natural or cultivated, and all structure-supported crops, other structures, trees, brush, vegetation, fire, and electrical hazards.

SI2f See response to Comment SI2c.

Comment(s)

Response(s)

SI3

Defenders of Wildlife

From: **Eliza Cava** <ECAVA@defenders.org>
Date: Thu, May 22, 2014 at 9:34 PM
Subject: Defenders of Wildlife Gateway South DEIS Comments
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>
Cc: "tgertsch@blm.gov" <tgertsch@blm.gov>, Jon Belak <JBELAK@defenders.org>

Dear Ms. Gertsch,

Please confirm receipt.

Attached are Defenders of Wildlife's comments on the Draft Environmental Impact Statement (DEIS) for the proposed Gateway South transmission project. Our comments focus on four key issues:

1. General recommendations for avoiding, minimizing, and compensating for wildlife impacts;
2. Minimizing potential impacts to key species, including greater sage-grouse and black footed ferret, and recommendations for management and mitigation;
3. Changes needed in the Habitat Equivalency Analysis (HEA) for determining compensatory mitigation obligations for greater sage-grouse; and
4. The relationship of the GWS project with the West-Wide Energy Corridors designated pursuant to Section 368 of the Energy Policy Act of 2005, specifically in the context of potential impacts to wildlife species and habitats.

In addition, we support many of the comments, concerns and recommendations made in comments on the Gateway South DEIS by a coalition of conservation organizations (TWS, Audubon Rockies, and partners, May 22, 2014).

We thank you for the opportunity to submit these comments. Please contact jbelak@defenders.org with any questions.

Sincerely,

Eliza Cava
Policy Analyst
Renewable Energy & Wildlife

Defenders of Wildlife
1130 17th Street N.W. Washington D.C. 20036-4604
Tel: 202-772-3280 | **Fax:** 202-682-1331 | **Mobile:** 202-503-9141
ecava@defenders.org | www.defenders.org

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

May 22, 2014

Energy Gateway South Project
c/o Tamara Gertsch
BLM National Project Manager
Bureau of Land Management
P.O. Box 21150
Cheyenne, Wyoming 82003
Via email (GatewaySouth_WYMail@blm.gov) and online submission

RE: Comments on the Notice of Availability of the Draft Environmental Impact Statement and Land-Use Plan Amendments for the Energy Gateway South Transmission Project in Wyoming, Colorado, and Utah

Dear Ms. Gertsch:

This letter transmits comments on the Gateway South Transmission Line Project (GWS project) submitted by Defenders of Wildlife (Defenders). We appreciate the opportunity for stakeholder engagement and thank you for your consideration of our comments.

Our comments focus on four key issues:

1. General recommendations for avoiding, minimizing, and compensating for wildlife impacts;
2. Minimizing potential impacts to key species, including greater sage-grouse and black footed ferret, and recommendations for management and mitigation;
3. Changes needed in the Habitat Equivalency Analysis (HEA) for determining compensatory mitigation obligations for greater sage-grouse; and
4. The relationship of the GWS project with the West-Wide Energy Corridors designated pursuant to Section 368 of the Energy Policy Act of 2005, specifically in the context of potential impacts to wildlife species and habitats.

SI3a

In addition, Defenders supports many of the comments, concerns and recommendations made in Gateway South Draft Environmental Impact Statement (EIS) Comments (TWS, Audubon Rockies and partners, May 22, 2014), specifically recommendations related to:

- BLM should provide information to the public on anticipated subscribers to GWS and how GWS will impact regional electricity generation and transmission;
- FEIS Should Properly Identify Breadth of Impacts and GWS Should be Designed to Avoid, Minimize, and Effectively Mitigate Impacts;
- Identification of areas with high potential for biological impacts that should be avoided
- Additional recommended BMPs that the FEIS should require;
- Mitigation of impacts through off-site, compensatory mitigation;
- BLM must consider, disclose and analyze significant new information in the DEIS in order to demonstrate Purpose and Need;
- Challenges to Evaluate Wildlife Impacts as Presented in DEIS, including the need to break out impacts analysis by segments in the FEIS, not by route alternative.

1

Response(s)

SI3a

It is not the BLM's role or responsibility to verify the Applicant's interests and objectives for a proposed project. As a regulated utility, the need for transmission projects proposed by PacifiCorp is scrutinized by the Public Utilities Commission. The responsibility of the BLM and other land-management agencies is to respond to the application for right-of-way across lands it administers.

As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS, and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Response continued on next page.

Comment(s)

Response(s) - continued

SI3 **Defenders of Wildlife (cont.)**

SI3a cont.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

Section 2.5.1.3 and Figure 2-7 for the Final EIS presents the systematic and progressive analysis for screening and comparing local areas (Level 1 analysis) then subregional areas (Level 2 analysis) that was conducted to narrow the number of alternative routes and determine the most environmentally acceptable routes to be addressed in the EIS. That is, for each level, once the impacts along each of the areas (local/sublocal/regional) of alternative routes had been analyzed, the areas of alternative routes were screened and compared to identify which were most environmentally preferable and to eliminate from further consideration less preferable ones (in accordance with criteria at 40 CFR 1502.14). The Level 1 and 2 analysis results are recorded in the Project record. Routes considered and eliminated from detailed analysis through the Level 1 and Level 2 screening and analysis are described in Section 2.6.2 in the EIS. The Level 3 analysis involved combining the suitable segments of routes from the first two levels of screening to form complete routes. The Level 3 analysis is presented in the EIS. The commenter is referred to Tables S-1a through S-1d in the EIS that provide a detailed comparative analysis (Level 3) of the resources for each alternative route and route variation considered in detail in the EIS. The tables identify key resource inventories and associated impacts for each resource based on the analysis presented in Chapter 3. Further, the commenter is referred to the Map Volume (Volume II) that accompanies the EIS. The map volume contains 1 map showing construction access levels that predict (1) the general type of access required for each mile of alternative route and route variation and (2) the associated disturbance, and 23 maps showing resource inventory and impacts. The inventory and impacts are reported by link. Finally, because of this systematic and progressive analysis, the Agency Preferred Alternative identified for the northern Project area (from Aeolus Substation, Wyoming, to near U.S. Highway 40 at the Colorado-Utah border) and southern Project Area (from the Colorado-Utah border to the Clover Substation, Utah) in the EIS does indeed reflect the agencies' preference for consideration by the agency decision-makers when selecting and approving a route.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

General Recommendations for Avoiding, Minimizing, and Compensating for Wildlife Impacts

The Department of the Interior (DOI or Interior Department) and Bureau of Land Management (BLM) are aggressively transitioning to a landscape-scale approach to public lands management that will address conservation and development priorities and needs across a broader ecological scale.[1] This approach is further supported by the June 2013 Presidential Memorandum (PM) on Transforming our Nation's Electric Grid Through Improved Siting, Permitting, and Review; a May 17, 2013 PM on Modernizing Federal Infrastructure Review and Permitting Regulations, Policies, and Procedures; and a subsequent report released in May 2014 on implementing the Infrastructure PM. The GWS project, which crosses three states, substantial wildlife habitat, and miles of unfragmented lands, represents a well-timed opportunity to put these policies in action. We note and applaud the BLM for including Appendix K, "Bureau of Land Management Mitigation Guidance," in the GWS DEIS, and we encourage the BLM to continue to track agency and departmental guidance in defining mitigation obligations throughout the GWS review process.

All proposed routes of the GWS project pass through sensitive habitats and would have significant impacts on key species, but these impacts can be greatly minimized through the use of common sense siting and design principles. The use of existing Rights of Way (ROWs) and previously degraded lands is a fundamental strategy that should be employed to minimize impacts to wildlife movement corridors and preserve unfragmented wildlife habitats needed for species persistence and climate adaptation

Recommendation: Use existing ROWs

SI3b Although the transmission structures presented in the DEIS typically do not require guy wires, any locations where guy wires are used pose an additional collision risk to low-flying birds. We recommend that use of guy wires be avoided whenever possible and in cases where there is no other feasible alternative that they be marked.

SI3c The DEIS also states that the applicant has committed to using tubular H-frame transmission structures within 4 miles of sage-grouse leks in designated sage-grouse core areas and priority habitats. We agree that special attention to structure design in these and other areas is needed, but recommend that any structure to be used in these sensitive areas be purposed to prevent the raptor and corvid perching and nest-building that can result in mortality, power outages, and increased fire risk. Rather than using structures that provide extensive perching opportunities that present extensive horizontal perching surfaces that require perch-discourager retrofits, structures for these areas should prevent avian perching and nesting as an integral part of their design. As documented by research[2] and cited by Power Company of Wyoming in their TransWest Express Transmission line (TWE) DEIS comments, retrofitted perch deterrents may reduce, but do not eliminate perching by raptors and the predation threat to sage-grouse and other species. Vertical configurations are preferable, both for perch management as well to reduce bird-caused electrical outages and increase reliability.[3] Of the structure types shown in Figures 2-1 and 2-2 in the Proposed Action section, only the 345kV single circuit monopole tangent structure designs has this optimal vertical configuration.

---

[1] See Sec. Order No. 3330, Interim Policy 2013-142, Draft – Regional Mitigation Manual Section 1794

[2] Lammers, W.M. and M.W. Collopy. 2007. Effectiveness of Avian Predator Perch Deterrents on Electric Transmission Lines. Journal of Wildlife Management 71:2752-2758.

[3] Vosloo, H.F., E. Shunmagum, and G. Bruce. 2006. Transmission Bird Perch Guidelines. Eskom South African Power Utility. http://migratorysoaringbirds.undp.birdlife.org/sites/default/files/BIrd%20Perch.pdf

2

Response(s)

SI3b Comment noted. The Applicant has not proposed any guyed transmission structures.

SI3c See response to Comment SI3b.

The BLM understands the Applicant has worked with the FWS, APLIC, and other agencies to develop an APP for their facilities and distribution and transmission lines in their service territory. The APP and APLIC guidelines for protection and collisions are referenced at a high-level in the EIS. Project-specific standards, methods, and measures (including avian-specific mitigation) will be described in the POD to be developed in coordination with cooperating agencies, including FWS and state wildlife agencies.

Comment(s)

Response(s)

SI3 **Defenders of Wildlife (cont.)**

SI3c

Numerous structure types and manufacturers exist, and we recommend that the specific type used in sensitive areas should definitively address perching issues.

Recommendation: Require structures that do not require guy wires or retrofits, such as tubular H-frame transmission structures, to prevent avian perching so as to provide durable and integral protection for the life of the project.

Sensitive and other Imperiled Species

Analysis of project impacts on sensitive and imperiled species must be comprehensive: geographically encompassing the entire footprint of the project and temporally encompassing all impacts associated with construction, operation, and maintenance over the life of the project.

Direct loss of wildlife due to collisions with motor vehicles, crushing of burrows or nests, direct loss of wildlife habitat and fragmentation of habitat, and electrocution and collision with power lines as well as indirect effects such as species displacement, barrier effects, increased predation rates, creation of mammalian predator travel lanes, increased nest parasitism, invasive plant species, increased wildland fire risk, lower wildlife density, increase in trash/human waste, and increase in off-road vehicle traffic must be assessed.

SI3d

As noted by FWS in their recent comments on the proposed TWE project, many of the impacts associated with transmission line construction (e. g. fragmentation, barrier effects, increase predation on ground nesting birds, etc.) extend beyond the immediate 250 foot ROW corridor, but as with TWE, the GWS DEIS only acknowledges temporary impacts in a restricted set of work areas along the ROW and defines post-construction impacts only for areas that would be covered by structures, asphalt, or concrete.

Recommendation: Quantify project impacts on BLM Special Status and other imperiled species, and broaden impacts analysis beyond a 250 foot ROW

Ensure the Durability of Management Decisions for Conservation Use

Critical to protecting large expanses of sagebrush steppe and current populations of greater sage-grouse will be the BLM's ability to ensure enduring designation and management of public lands. We are supportive of the BLM's recognition of the need for durability in Appendix K, "Bureau of Land Management Mitigation Guidance," and we encourage the agency to continue to track agency and departmental guidance in defining mitigation obligations (including durability) throughout the GWS review process.

The BLM has ample authority to provide durable protection for lands identified for conservation purpose and current Department of the Interior and BLM policies require BLM to provide "durable mitigation" for infrastructure development on public lands. "Durable mitigation" is mitigation that is effective for as long as the impacts being mitigated for last, plus restoration. BLM has a number of available tools that can and should be used simultaneously to achieve this goal, i.e. "layering."

To date BLM chiefly emphasizes land use planning decisions, including Area of Critical Environmental Concern and similar designations, as the way to achieve durable mitigation. Land use plans are unquestionably important tools for managing our public lands. But land use plan decisions standing alone are not sufficiently durable. All land use plan decisions, including conservation designations, management prescriptions and rule sets, are subject to amendment and revision before conservation objectives have been achieved.

3

SI3d

The assessment of potential direct and indirect impacts on biological resources that could result from the proposed Project was assessed within a 2-mile-wide study corridor (Table 2-9) and was not limited to the 250-foot right-of-way.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

To enhance the durability of its mitigation and conservation decisions, BLM must expand its current approach to include other tools in addition to land use planning, including: Rights of Way for Conservation, which could be issued to a state wildlife agency or the US Fish and Wildlife Service (FWS); withdrawals of incompatible uses and retention of lands or withdrawals of incompatible uses and transfer of management authority to FWS and creation or expansion of wildlife refuge; conservation easements; and cooperative agreements.

SI3e

In addition to focusing on durability of mitigation commitments, the Final EIS should specify details regarding planned off-site mitigation to compensate for impacts, including funding commitments, monitoring plans, and public transparency. Furthermore, conservation opportunities across ownerships at the landscape scale should be pursued as mitigation where possible, to provide the best possible outcomes for conservation and to incorporate resiliency to climate change. Larger scale conservation efforts may provide a useful hedge against expect impacts, the extent of which cannot be precisely forecast today. Such approaches to mitigation are being employed in the California Desert Renewable Energy Conservation Plan, and they should be considered here as well.

> **Recommendation: Continue to track agency and departmental guidance in defining compensatory mitigation obligations (including durability) throughout the GWS review process, and describe in detail how those policies and guidance will be implemented in the Final EIS.**

Impacts to Key Species

Greater sage-grouse

SI3f

Habitat disturbance and fragmentation have been influential in this species' decline. Naugle et al. (2011) state that "recent research demonstrated that sage-grouse populations declined when birds behaviorally avoid infrastructure in one or more seasons (Doherty et al. 2008), when cumulative impacts of development negatively affect reproduction or survival (Aldridge and Boyce 2007) or both (Lyon and Anderson 2003, Holloran 2005, Kaiser 2006, Holloran et al. 2007)." Avoidance of energy development by greater sage-grouse restricts their distribution, and may result in population declines if density dependence, competition or displacement into poor-quality habitats lowers survival or reproduction among displaced birds (Holloran and Anderson 2005, Aldridge and Boyce 2007)." This body of research, while primarily focused on the effects of oil and gas development, evaluates impacts that have relevance for transmission line development as well.

Greater sage-grouse are landscape specialists requiring large, intact sagebrush habitats. Sage-grouse rely on different types of sagebrush habitat to satisfy their requirements during different seasons of the year, with the annual range of a sage-grouse encompassing up to 2,700 square km (Knick and Connelly 2011). Damage to even one of its seasonal habitats can impact sage-grouse. Because sage-grouse are a landscape-scale species, ensuring the species' survival requires comprehensive analysis of remaining habitats and populations on a range-wide basis, and then adopting a range-wide conservation plan to ensure that adequate regulatory mechanisms are in place to protect the species across its range. Indeed, FWS has recognized this basic fact, explaining, "Meaningful restoration for greater sage grouse requires landscape, watershed, or eco-regional scale context rather than individual, unconnected efforts." See 75 Fed. Reg. at 13917.

> **Recommendation: Connect project-level sage-grouse mitigation to landscape-scale planning for species recovery**

4

Response(s)

SI3e

See resonse to comment SI3a.

When applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

Recommendations regarding the location of potential off-site mitigation are consistent with BLM and USDI mitigation policies and will be considered during development of any potential mitigation. Off-site mitigation being considered by the BLM and relevant regulations and policies are described in in Appendix E (BLM Mitigation Guidance), Appendix K (Sage-grouse Compliance) and Section 3.2.9 (migratory birds) of the Final EIS.

SI3f

Potential direct and indirect effects of the project on greater sage-grouse are described in Section 3.2.8.4.3 under the heading Special Status Upland Game Birds. The BLM is actively engaged with the Applicant and other relevant agencies to develop appropriate compensatory mitigation for resources for which land-use plan goals and objectives or regulatory thresholds could not be met with onsite avoidance, minimization, and selective mitigation measures. The BLM has provided information regarding possible measures that could be used to compensate for the effects of the project on sage-grouse in Appendix K. Landscape-scale planning for sage-grouse conservation is outside the scope of this project.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

SI3g

This project comes at the most critical time for the conservation of greater sage-grouse ahead of the listing decision, a time when local management and protection must be focused on preserving conservation success and species recruitment, but guided by an overall strategy that accounts for direct, indirect and cumulative effects and charts a course for rangewide recovery and persistence. If the project is approved, BLM should establish through the EIS the mitigation goal of an overall gain in conservation benefit for sage-grouse after the transmission line is developed compared with their status before the line. This will require a better understanding of the species' use of habitat and an analysis that fully addresses cumulative and indirect effects.

Recommendation: Overall Conservation Benefit must be an explicit goal of the GWS EIS

SI3h

Preservation of sage-grouse habitat is best accomplished through permanent protection from land cover conversion, but few areas are permanently protected; Hanser et al. (2011) state that less than 2% of sagebrush in the Wyoming Basin Ecoregional Assessment area (which includes western Wyoming and parts of CO, UT, ID, and MT) is permanently protected. In addition, many of the remaining sagebrush habitats used by greater sage-grouse are threatened by fire and invasive weeds. To address the main threats to the species, the focus of greater sage-grouse conservation should be on limiting conversion of good habitat and limiting anthropogenic disturbance within good habitat. Retaining and protecting high quality sagebrush habitat is more effective, efficient, and economical than attempting to restore habitats already degraded by cheatgrass invasion, fire, and/or juniper encroachment (Wisdom et al. 2003). While sagebrush restoration must be an integral part of sage-grouse protection, efforts should be well-targeted, and avoidance and protection of high quality habitat must be prioritized.

Recommendation: Make preservation of intact habitat top priority for mitigation

SI3i

Transmission structures have negative direct and indirect impacts on greater sage-grouse. The 2009 Department of Energy report "Sage-Grouse and Wind Energy: Biology, Habits, and Potential Effects from Development," states that "Braun et al. (2002) reported that sage-grouse were particularly susceptible to the placement of overhead power lines at within 0.8 km (0.5 mi) of nesting grounds. Significant impacts to sage-grouse have been documented from overhead power transmission and communication distribution lines out to 6 km (3.7 mi) (Manville 2004)." More recently, a study using positions collected from collared sage-grouse concluded that sage-grouse avoid areas within 600 m of transmission lines (Gillan et al. 2013). This result is supported by USGS research (Hanser et al. 2011) that modeled sage grouse habitat use through pellet counts and found a significant negative effect on activity from transmission lines within a 500 m radius. Finally, the 2013 USGS synthesis of the status of the species and threats across the range states that sage-grouse may avoid habitats within 0.4–2.9 mi (0.6–4.7 km) of a transmission line, that erection of a transmission line close to a lek will negatively influence sage-grouse lek attendance and breeding-season behavior, that higher densities of power lines within 4 mi (6.4 km) of a lek may negatively influence lek persistence, and that foraging distances of avian sage-grouse predators have been estimated at 4.3 mi, suggesting that transmission and power lines may influence sage-grouse at large spatial scales (Manier et al. 2013).

The USFWS 2010 listing determination identifies power lines as directly affecting greater sage-grouse "by posing a collision and electrocution hazard" (Braun 1998, pp. 145-146; Connelly et al. 2000a, p. 974), having indirect effects by decreasing lek recruitment (Braun et al. 2002, p. 10), increasing predation (Connelly et al. 2004, p. 13-12), fragmenting habitat (Braun 1998, p. 146), and facilitating the invasion of exotic annual plants (Knick et al. 2003, p. 612; Connelly et al. 2004, p. 7-

Response(s)

SI3g

In accordance with BLM WO-IM 2012-043, the BLM will cooperate with the Applicant to develop and implement appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would meet BLM's current management objectives for sage-grouse. As described in Appendix K, the Applicant will develop a voluntary sage-grouse conservation and mitigation plan in coordination with the agencies for the Agency Preferred Alternative route. The mitigation plan will offer measures to avoid, minimize, or compensate for Project effects characterized by the framework and identified in the EIS that could not be mitigated or avoided using measures in BLM or other agency plans, including losses of habitat services quantified using the HEA.

SI3h

In addition to habitat restoration, protection of existing habitat, as well as juniper removal, are identified as potential sage-grouse mitigation tools (refer to Appendix D of Exhibit F2 in Appendix K). The types of potential off-site mitigation identified are consistent with BLM and USDI mitigation policies and will be considered during development of any potential mitigation.

SI3i

The effects described in these references are discussed under the following headings in Section 3.2.8.4.3: Fragmentation of Sage-Grouse Habitats due to the Introduction of Tall Structures, Increased Electromagnetic Fields, and Construction of New Roads; Morality Due to Collisions with Power Line Conductors, Fences, or Guy Wires; Reduction in the Quality of Sage-grouse Habitat by Introducing the Spread of Noxious Weeds; Loss and Degradation of Sage-grouse Habitat Quality and Function; Disturbance to Sage-grouse and Disruption of Breeding Activities due to Increased Human Presence and Noise at Lek Locations; Disturbance to Sage-grouse During Nesting, Breeding, and Wintering Periods Resulting from Human Presence, Vehicle Use, and Noise During Construction and Maintenance; Sage-grouse Avoidance of Habitat Due to Potential Increase in Raptor Predation Pressure; and Increasing Predation Risk to Sage-grouse by Raptors and Ravens.

Avoidance of unnecessary impacts on sage-grouse will be achieved through the application of Project design features and site-specific selective mitigation measures. These measures are described in Section 3.2.8.4.3 and Table 3-102 of the Final EIS.

Design features that apply to sage-grouse habitat within 4 miles of leks include alteration of placement of roads or towers (Design Feature 3), construction to avian-safe design standards (Design Feature 4), seasonal restrictions (Design Feature 6), vehicle access restriction (Design Feature 26), construction activity access restriction (Design Feature 27), personnel instruction (Design Feature 28), hazardous material

Comment(s)

SI3 | **Defenders of Wildlife (cont.)**

SI3i

25) (page 18). Additionally, sage-grouse could be impacted through a direct loss of habitat and human activity (especially during construction periods) (USFWS 2010 at 44). The Gateway West FEIS noted that recent research identified the best predictors between extirpated and occupied ranges to include distance to transmission lines (Wisdom et al 2011). FEIS at 3.11-74. Knick et al. 2013 further emphasized intolerance of grouse to human disturbance and development, reporting that 99 percent of active leks in the species' western range were in landscapes with less than three percent disturbance.

Avoidance of unnecessary impacts to sage-grouse must be the priority, and we recommend following the guidelines for conserving sage-grouse and their habitat contained in the 2011 report of the National Technical Team (NTT), a committee of 23 federal and state land managers and sage-grouse experts (including 14 BLM representatives). The NTT report, a primary reference for the National Greater Sage-Grouse Planning Strategy, recommends making priority habitat "exclusion areas" for new ROWs, and general habitat "avoidance areas." Priority habitat is generally defined as "having the highest conservation value to maintaining sustainable Greater Sage-grouse populations" (BLM Memo 2010-071) and should include all active sage-grouse leks, and brood-rearing, transitional and winter habitats. "Priority habitat will be areas of high quality habitat supporting important sage-grouse populations, including those populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity" (BLM Memo 2010-071). The only exception defined by the NTT is in cases where a project can be co-located within the footprint of an existing disturbance area.

We also echo the FWS recommendations provided for the TWE DEIS that construction activity and earth disturbance within a 4-mile buffer surrounding leks during the lekking and nesting season construction activity and earth disturbance in winter habitat between November 15— March 15 be avoided.

Recommendation: Exclude development in PPH, within 4 miles of leks, except in cases where new development can be completely contained within the footprint of existing infrastructure.

SI3j

In cases where the route would cross through occupied greater sage-grouse habitat, GWS must coordinate with Rocky Mountain Power to co-locate the proposed GWS line as close as possible to the proposed TWE line. Industry safety standards allow for separation distances as minimal as 250 feet, and this recommendation is consistent with objectives outlined in the COT report as well as with comments submitted by FWS on the TWE DEIS.

Recommendation: Prioritize co-location of new transmission whenever possible and minimize separation distance to 250' or less.

Given that sage-grouse conservation must be prioritized and that transmission and other developments do impact the species, it is essential to use project-scale mitigation methods that provide measurable benefits that can be integrated upward to landscape scale planning and coordinated with other efforts such as CCAs and CCAAs. A scientific and data-driven approach is needed that is inherently more accurate, replicable, efficient, and compatible with landscape-scale planning.

The BLM-initiated National Greater Sage-Grouse Planning Strategy is intended to improve sage-grouse management on the estimated 47 million acres of sagebrush steppe under BLM control and make eventual recovery of the species possible. This will entail amending dozens of Resource Management Plans (RMPs) to incorporate policies and provisions designed to restore the species

Response(s)

SI3i cont.

restrictions (Design Feature 30), vehicle speed limit for overland travel (Design Feature 39), minimization of new or improved Project accessibility (Selective Mitigation Measure 5), seasonal and spatial wildlife restrictions (Selective Mitigation Measure 12), and overland access (Selective Mitigation Measure 13).

As described under Design Feature 3 (Section 3.2.8.4.3), locations of sage-grouse populations and habitats will be identified from existing agency data or from Project-specific surveys prior to construction. Identification of populations and habitats will be used to develop site-specific avoidance and mitigation plans.

Residual impacts on sage-grouse anticipated to remain following application of the design features and site-specific selective mitigation measures are addressed through additional mitigation as described in Appendix K.

SI3j

See responses to SI3f through SI3i.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

and protect its diminishing sagebrush steppe habitat. This unprecedented planning process, properly executed, could finally reverse declining Greater Sage-grouse populations, while providing for sustainable use of public lands, but success will require coordination and communication within and between agencies as well as agency flexibility to propose the range of land use restrictions necessary

SI3k to conserve sage-grouse. At the project level, BLM is required by IM 2012-043 to determine whether the "proposed ROW and mitigation measures would cumulatively maintain or enhance greater sage-grouse habitat." If it does not, appropriate mitigation must be defined through consensus between the state BLM, wildlife agency, and FWS representative, or failing that, through the Sage-Grouse National Policy Team and possibly even the BLM director. Given this structure, to avoid time and resource intensive, high-level review of individual projects, the approach to evaluating impacts should involve a turnkey, transparent approach that gets it right the first time and avoids repetitive evaluations.

Recommendation: Use transparent, quantitative, and replicable methods to streamline compliance with the IM 2012-43 requirement to determine whether maintenance or enhancement of Sage-Grouse Habitat is occurring with each project

Avian Species

SI3l Take of avian species, particularly through disrupting reproduction and power line collision, is likely unavoidable with a transmission project of this size and location. Although the applicant has an Avian Protection Plan (APP) as recommended by the U.S. Fish and Wildlife Service (FWS) that was last updated in 2011, collision, electrocution, and perching/nesting risk assessments associated with the specific route selected would need to be performed to update the APP and minimize avian risk if this project were developed.

SI3m Raptors are particularly affected by construction and operations disturbance during nesting season, and for these species the nesting season is critical to productivity, short-term diversity, and long-term trends. Any activity that disrupts breeding, feeding, sheltering, and roosting behavior and causes, or is likely to cause, nest abandonment or reduced productivity is considered disturbance and is a violation of BGEPA, but the nest buffers proposed for this project are inconsistent and inadequate.

SI3n **Recommendation: Update the existing 2011 Pacificorp Avian Protection Plan if an action alternative is chosen to evaluate the entire project ROW for avian risk.**

SI3o **Recommendation: Prohibit surface-disturbing activities within 1 mile of nests occupied within the last 7 years for the following raptor species: Golden Eagle, Ferruginous Hawk, and the BLM Special Status Burrowing Owl, Swainson's Hawk, Peregrine Falcon, and Northern Goshawk. Year-round exclusion areas should be considered if assessments indicate a need.**

Golden Eagle

SI3p As previously suggested by multiple NGO groups including Defenders, we recommend that the BLM develop a supplemental golden eagle document for public review and comment. Given the continued concern for these important raptors related to windpower mortality and expanding electrical infrastructure, any development decisions must be consistent with conservation requirements under BGEPA. Golden eagle project-level impacts must be placed within the appropriate regional population context; areas 10 miles from the application area should be evaluated. Adequate buffers for golden eagle should be in place and monitored to evaluate

7

Response(s)

SI3k As described in the Energy Gateway South Transmission Project Greater Sage-grouse HEA Plan (Appendix K), the HEA that will be used is a replicable method for determining project-related permanent and interim habitat losses. The HEA will be used to quantify impacts on sage-grouse and mitigation needed to meet management standards.

In accordance with agency policies pertaining to offsite mitigation, the BLM, cooperating agencies, and Applicant are working collaboratively to develop appropriate offsite mitigation that could be implemented to facilitate reasonable development of the Project consistent with applicable agency plans and policies pertaining to sage-grouse.

SI3l APPs are utility-specific documents that delineate a program designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities. The Applicant for the Project is an existing, regulated public utility with an existing programmatic APP that would apply to the Project, if built. Programmatic APPs can be developed to establish utility-wide practices and are not intended to be developed for individual projects. The Applicant's APP is included in the Administrative Record and includes monitoring, reporting, and best management practices to reduce avian mortality.

Location-specific avian protection measures will be developed in collaboration with the agencies and be compatible with the Applicant's existing APP.

SI3m Due to the large size of the Project area and associated variations in local climate, the chronology of raptor nesting activities is variable from site to site and area to area. Raptor nest spatial buffers and seasonal restrictions incorporated into the EIS represent the recommendations of regulatory agencies responsible for protection of raptors (i.e., FWS) in each of the three states crossed.

The comment incorrectly implies that the cited types of disturbance would result in a violation of the Bald and Golden Eagle Protection Act for any raptor species. Regardless, the EIS contains the spatial and seasonal protections recommended by the FWS for each of the species identified in the comment.

Also refer to Comment SI3l.

SI3n See response to Comment SI3l.

SI3o See response to Comment SI3m.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

SI3p

effectiveness. For unavoidable impacts, compensatory mitigation through retrofitting high-risk power poles should be considered. Spatial buffers for golden eagle nests should be 1.0 miles.

> **Recommendation: Develop a supplemental golden eagle document, such as an Eagle Conservation Plan, for public review that places project-level eagle impacts within a regional population context, considers areas within 10 miles of the application area, incorporates retrofitting high-risk power poles as potential mitigation, and requires a one mile buffer around nests.**

Black footed ferret

SI3q

All WYCO routes pass through at least two black-footed ferret reintroduction management areas. Both potential routes from the Aeolus substation at the eastern end of the line extend into the southeastern edge of Wyoming's Shirley Basin reintroduction management area in Wyoming, which has an active population. At the end of the WYCO routes near the Colorado Border, all routes pass through the Wolf Creek reintroduction management area that contains the Colorado Parks and Wildlife Tuttle Ranch Easement. This latter area was designated for the purpose of ferret reintroduction, and although the white-tailed prairie dogs that would have supported the ferrets are currently extirpated due to plague, it is vital to maintain the viability of this area as a future reintroduction site, as well as to honor state agency conservation projects such as Tuttle Ranch that protect high quality habitat for a range of species. COUT routes leaving Colorado and passing into Utah all intersect reintroduction management areas as well; the northern and southern routes cross the Snake John and Coyote Basin reintroduction management areas, respectively. Ferrets were present during 2013 spotlight surveys.

SI3r

Despite the negative impacts of plague on both prairie dogs and ferrets as well as the experimental-nonessential status (Section 10(j), ESA) of the ferret within reintroduction management areas, the potential for future restoration efforts for both species must be maintained, and not precluded or compromised by development incompatible with recovery. Direct displacement of black-footed ferrets and white-tailed prairie dogs would be limited to the development footprint. However, the increased potential for raptor perching and nesting and the associated increase in predation pressure is a potential concern that applies both to areas that currently support both species. For ferrets these concerns extend to great horned owl predation since they are nocturnally active.[4]

> **Recommendation: Perform pre-construction surveys for both species in compliance with existing guidelines, and avoid development in occupied areas.**

SI3s

> **Recommendation: Use structures designed to provide no perching opportunities wherever needed in consultation with FWS and state game personnel as to avoid compromising future recovery in these areas.**

---

[4] Poessel, S.A., Breck, S.W., Biggins, D.E., Livieri, T.M., and L. Ageloni. 2011. Landscape features influence postrelease predation on endangered black-footed ferrets. Journal of Mammalogy, 92(4):732–741, 2011; DOI: 10.1644/10-MAMM-S-061.1

Response(s)

SI3p

The analysis recommendations referenced in this comment are typical for industrial-scale wind energy developments where the NEPA analysis conducted for those projects predicted a clear risk to eagles, including a high probability of mortality. For this project, BLM's NEPA analysis did not find that mortality or take of eagles was likely under any of the alternative routes and route variations. Thus, the analysis presented in the EIS is appropriate for the identified risk to eagles. The BLM has advised the Applicant of the company's responsibility to protect eagles and requested that the Applicant coordinate with FWS on this issue. The BLM is not aware of recommendations from FWS to reconsider the analysis conducted or to develop an eagle conservation plan for this project.

Also see response to Comment SI3m.

SI3q

Descriptions of the Shirley Basin, Wolf Creek, Snake John, and Coyote Basin black-footed ferret reintroduction management areas are provided in Section 3.2.8.5.4. Coordination with FWS for black-footed ferret will continue during Section 7 consultation.

SI3r

As described under Design Feature 3 (Section 3.2.8.4.3), surveys for special status wildlife, which include white-tailed prairie dogs and black-footed ferrets, would be conducted in suitable habitat along the selected route using approved protocols of the BLM, USFS, or other cooperating agency. Impact avoidance and minimization measures would be applied as practicable to avoid adverse impacts on populations and habitat where identified, which may include altering the placement of roads or towers. This design feature will minimize adverse impacts on special status wildlife to the extent practicable through the identification of populations and habitats prior to construction and the creation of site-specific avoidance and mitigation plans. The full list of design features and selective mitigation measures applicable to white-tailed prairie dogs and black-footed ferrets are listed in Table 3-102. Increased predation resulting from transmission towers would be minimized by colocating the line with other proposed or existing transmission lines, which would reduce the proliferation of perch sites in new areas across the landscape.

SI3s

The BLM understands the Applicant has worked with the FWS, APLIC and other agencies to develop an APP for their facilities and distribution and transmission lines in their service territory. The APP and APLIC guidelines for protection and collisions are referenced at a high-level in the EIS. Project-specific standards, methods, and measures (including avian-specific mitigation) will be described in the POD to be developed in coordination with cooperating agencies, including FWS and state wildlife agencies.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

Changes needed in the Habitat Equivalency Analysis (HEA) for determining compensatory mitigation obligations for greater sage-grouse

We have previously defined seven required elements for a defensible transmission project HEA. These elements, which remain essential for acceptance of the HEA approach, are:

1. Ensure that variation in sage-grouse habitat value is accurately reflected by the HSM model, including cumulative and indirect effects of development on habitat. These elements are not explicitly incorporated in the proposed HSM.
2. Ensure that lost habitat services in high-quality sage-grouse habitat are replaced by habitat services in high-quality sage-grouse habitat, rather than by large areas of lower-quality habitat in need of significant restoration. Replacement of habitat services should balance habitat quality and quantity to optimize mitigation and maximize conservation benefit.
3. Ensure that the measures used for mitigation actually represent a gain to sage-grouse that will offset the impacts to sage-grouse, rather than incorrectly characterizing actions that the BLM is already required to complete (i.e. post-fire stabilization and restoration) as compensatory mitigation actions, as is proposed in the HEA.
4. Ensure that conservation easements counted as compensatory mitigation are also clearly a gain to sage-grouse that offsets negative impacts on sage-grouse, rather than merely a continuation of use of existing habitat.
5. Ensure that conservation easements for the species are acquired and maintained as long as transmission lines and structures are present on the landscape, not just during the estimated 100 year period when areas within the ROW are recovering from disturbance. Since there is no evidence that sage-grouse will re-occupy these areas in close proximity to power lines and associated structures, they should be treated as a permanent loss of sage-grouse habitat.
6. Clearly define the habitat services lost and replaced.
7. Clearly describe the time frames and risks of failure for habitat restoration efforts.

Unfortunately, we identified the following concerns regarding the GWS HEA, many of which are similar to concerns we have expressed in the past regarding the HEAs for GWW and TWS:

SI3t
- Appendix A of Appendix F, "Proposed Habitat Service Metric for the Gateway South Transmission Line," acknowledges that some of the scoring and weighting of the model had no basis in available literature, and that professional judgment was the standalone criteria for assigning values in these cases. This approach, which is only loosely based on previous research across the species' range, lacks sufficient biological realism and is inherently inaccurate at the project level. The additive nature of HEA analyses makes results very sensitive to the assumptions used to estimate habitat services, without the use of actual species habitat use data. Use of this analysis is likely to result in extreme underestimates in HEA model predictions of required mitigation and net habitat loss for the species. This is not a defensible strategy when the tools exist to do the job. The BLM must instead adopt a HEA process that models actual sage grouse habitat use to identify the strongest habitat predictors.

SI3u
SI3v
- The Framework for Sage-grouse Impacts Analysis for GWS (Appendix F, Exhibit F1) specifies that an impact analysis that 1) evaluates direct and indirect impacts and 2) addresses the direct loss of birds is a prerequisite 3) "to identify mitigation needs and to develop mitigation plans that focus on the amount and locations of impacts and commensurate mitigation measures and actions." Thus the mitigation plan must include impacts previously

9

Response(s)

SI3t

Comments noted. A technical working group (the HEA Technical Working Group) that included sage-grouse biologists from the BLM, FWS, state wildlife agencies, and other cooperating agencies was convened by the Applicant and collaborated to provide input and guidance for developing the Applicant's HEA. The HEA provides a scientific-based, peer-reviewed method of scaling mitigation requirements to project-related permanent and interim habitat losses. HEA is a transparent, quantitative, and replicable method that will also be used to evaluate the benefit of sage-grouse habitat restoration and mitigation projects.

Habitat service levels were assigned based on the best available published literature and the professional judgment of local biologists for each metric. Professional judgment was not a standalone criterion. Habitat use data were not available; therefore the HEA tested model accuracy by comparing results to breeding densities.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

SI3u
SI3v

identified and evaluated in the first two steps above as well as those included in the current HEA framework. Unfortunately, the set of assumptions and calculations proposed to compensate for the impacts defined in steps 1 and 2 are completely divorced from the mitigation plans as currently proposed, and both are based on poorly founded assumptions virtually identical to those used for TransWest Express and Gateway West.

- Judgment-based models like that used for the Gateway South HSM model only allow the consequences of assumptions to be explored and provide no basis to objectively evaluate:
    - The strength of the relationship between each predictor and habitat use
    - Interactions between predictors
    - Changes across scales
    - Uncertainty in model output
    - The predictive power of competing predictors and competing models.

Sage-grouse habitat value is complex, and species habitat selection, particularly in the context of human disturbance, can be a contentious research topic. In this context, transparent, replicable evaluation is critical to ensure that variation in sage-grouse habitat value, including indirect effects of development on habitat, is accurately reflected, and that this analytical process is impartial and unbiased. Getting as close as possible to predictive, cause and effect relationships requires data-driven models based on the best available science that derive these relationships using observed habitat use, leaving no question as to the veracity of the results and providing the basic statistical properties required for a scientifically valid investigation. Defenders and the NGO community in the Intermountain West have submitted comments, analysis, and recommendations to the BLM on several occasions highlighting deficiencies in existing HEA models and making recommendations for improvement. We incorporate those comments by reference.[5]

Instead of judgment-based models, the BLM should use models using species habitat use data, such as the previously recommended Wyoming Basins Ecoregional Assessment sage-grouse model. A properly constructed, sage-grouse data-driven model would be able to measure all project impacts with a common yardstick based on modeled habitat value given habitat quality predictors and levels of disturbance. As we recommended for the Gateway West FEIS, the sage-grouse habitat analysis that forms the basis for the HEA should also be used to transparently estimate habitat value prior to development and habitat services lost during development, in addition to habitat services lost during recovery. Use of a more data-based process that uses statistical modeling would provide the vital information above needed to integrate project-level data into landscape-level planning in compliance with Secretarial Order on Mitigation 3330, as described in the introduction to this letter.

Development of an HEA process based on data rather than judgments would have other benefits, such as projecting habitat services generated by different potential conservation easements or management techniques. At the route planning stage, habitat services analyses could be used to rate

---

[5] Idaho Conservation League, Defenders of Wildlife, Audubon Colorado, Natural Resources Defense Council, Audubon Wyoming, Nevada Wilderness Project, The Wilderness Society, Wyoming Outdoor Council, Western Resource Advocated, Oregon Natural Desert Association, Center for Native Ecosystems, Sierra Club, and Yellowstone Coalition (April 4, 2012). Comments on Proposed Gateway West Transmission Line Project Sage-Grouse HEA.

Defenders of Wildlife, The Wilderness Society, and the National Audubon Society (August 3, 2012). Comments on the Sage Grouse Habitat Equivalency Anaylsis (HEA) for the Gateway West Transmission Line Project.

Defenders of Wildlife, Audubon Rockies, and The Wilderness Society (June 28, 2013). Comments on Proposed Gateway West Transmission Line Project Sage-Grouse Habitat Equivalency Analysis (HEA).

10

Response(s)

SI3u
SI3v

Comment noted.

The BLM and cooperating agencies are working collaboratively with the Applicant to develop the Applicant's Sage-grouse Mitigation Plan. The Applicant has prepared a statement indicating the company's intention to prepare a mitigation plan in accordance with the Framework and establishment of a HEA Technical Working Group that included sage-grouse biologists from the BLM, FWS, state wildlife agencies, and other cooperating agencies. As indicated in Appendix K of the Final EIS, the agencies and the Applicant have initiated development of this plan and the Framework for Sage-grouse Impacts Analysis. As indicated in the Framework for Sage-grouse Impacts Analysis, There will be two primary components of mitigation, a Project-wide mitigation plan and the HEA described in this section. The mitigation plan will include the HEA as articulated below, as well as any other impacts as identified in the EIS (i.e., indirect impacts) and associated mitigation not included in the HEA. The BLM, cooperating agencies, and Applicant acknowledge that adequate information and scientific knowledge does not exist to evaluate all potential impacts discussed in the EIS using HEA. These potential effects will be addressed using the best available information in the Applicant's Mitigation Plan to meet the BLM, cooperating agencies, and Applicant's obligations for sage-grouse mitigation.

The HEA provides a scientific-based, peer-reviewed method of scaling mitigation requirements to project-related permanent and interim habitat losses. HEA is a transparent, quantitative, and replicable method that will also be used to evaluate the benefit of sage-grouse habitat restoration and mitigation projects. Habitat service levels were assigned based on the best available published literature and the professional judgment of local biologists for each metric. Professional judgment was not a standalone criterion. Habitat use data were not available; therefore the HEA tested model accuracy by compared results to breeding densities.

The HEA does estimate habitat value prior to development and habitat services lost during development, in addition to habitat services lost during recovery. In Exhibit F2 of Appendix K, the section titled Quantification of Baseline Habitat Service Levels describes the process for estimating preconstruction habitat services (Appendix B); the section titled Quantification of Habitat Service Losses (Appendix C) describes the process for estimated habitat services lost during construction as well habitat services lost during restoration and recovery.

When applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

SI3v

the relative impacts of alternatives. As part of an effectiveness monitoring program, habitat services of habitat that has been protected, is recovering, or has been restored could be evaluated periodically to ensure that mitigation is effective and occurring at the appropriate ratio. These beneficial uses of a data-based habitat services metric model are not possible with proposed methods based on judgment models. Use of the data-based model across the mitigation plan would lead to integration within the overall mitigation plan as well as a means to standardize methods adaptively across projects and facilitate landscape-scale mitigation.

> **Recommendation: Since the sage-grouse Mitigation Plan must include all direct and indirect impacts, the BLM should develop models that predict observed sage-grouse habitat use using site-specific habitat and disturbance data for the HEA.**

> **Recommendation: A defensible HEA requires that the elements listed above be satisfied**

SI3w

We support the recommendation made by FWS for the TWE DEIS that a 0.6 mile buffer on either side of the transmission line be used to calculate the acreage of greater sage-grouse habitat that would be affected by indirect effects resulting from the presence of a transmission line for the HEA. This acreage represents degradation and fragmentation of sage-grouse habitat that cannot be avoided and these impacts must be compensated for.

> **Recommendation: Use a 0.6 Mile buffer to define the area of indirect sage-grouse effects for the HEA**

The relationship of the GWS project with the West-Wide Energy Corridors (WWECs) designated pursuant to Section 368 of the Energy Policy Act of 2005

Background on WWECs and recommendations for use in permitting projects like Gateway South

As directed by Section 368 of the Energy Policy Act of 2005, the BLM and USFS undertook a programmatic EIS to designate ROW corridors across public lands in eleven Western states in order to streamline and facilitate the siting of linear energy infrastructure (pipelines and transmission lines). However, the original West Wide Energy Corridor (WWEC) designations, proposed in 2009, did not do enough to connect renewable (rather than fossil fuel-generated) energy to towns and cities, did not provide enough opportunity for public input on their construction, and did not adequately analyze potential impacts on wildlife and the environment. In response, Defenders joined fellow conservation organizations and one county in challenging the designation of the originally proposed corridors. The litigation resulted in a settlement agreement, in which the agencies agreed to review the corridors to address these issues. Pursuant to the settlement agreement, the agencies developed a work plan for initiating a Corridor Study to assess the overall usefulness of the corridors and review corridor placement, utilization, and the use of Interagency Operating Procedures (IOPs). Following the Corridor Study, the agencies will initiate the first Regional Periodic Review of corridor designations, and develop a corridor monitoring plan to support the study.

Parallel to initiating the Corridor Study and Regional Periodic Reviews of WWEC designations, the BLM issued Instruction Memorandum No. 2014-080 on April 7, 2014. IM 2014-080 instructs field office officials to encourage applicants to site projects within the WWECs as currently designated,

11

Response(s)

SI3w

Comment noted. As described in Chapters 3 and Appendix K of the EIS, quantification of indirect effects on sage-grouse habitat is difficult and little research exists to support using any specific buffer for quantification. The HEA is being developed by the Applicant with a HEA Technical Working Group composed of agency biologists. BLM has provided this recommend to the HEA Technical Working Group for consideration during development of the Sage-grouse Mitigation Plan.

Comment(s)

Response(s)

SI3 **Defenders of Wildlife (cont.)**

and to make project proponents aware that siting projects within "Corridors of Concern" (COCs) as identified in the Settlement Agreement may:

- Involve significant environmental impacts;
- Include preparation of an environmental impact statement;
- Involve substantially increased or extensive mitigation measures such as regional or off-site mitigation to compensate for impacts to sensitive resources;
- Include consideration of alternatives outside the corridor and consideration of an alternative that denies the requested use;
- Include amendment of the applicable land use plan to modify or delete the COC and designate an alternative corridor; and
- Be challenged.

Gateway South overlaps with a number of designated WWECs, as shown in Figures 2 – 6. Three of these corridors (all in Utah, and among other issues all providing disproportionate access to coal-fired generation) were designated as "of concern": 126-258, 66-212, and 66-259. Both the agency- and applicant-preferred routes in Utah avoid overlap with COCs except for a section of agency-preferred COUT-C2, which overlaps with the northern end of WWEC COC 66-212.

In addition to using IM 2014-080 and COC designation to inform Gateway South siting, Gateway South should inform the WWEC re-evaluation process via the Corridor Study. Any corridor segment deemed not suitable for transmission development as a result of the Gateway South EIS should be removed from consideration as a WWEC.

IM 2014-080 directs permitting agencies to use applicable IOPs identified in the WWEC PEIS. The Gateway West DEIS incorporated a discussion of how its various sections, procedures, and mitigation measures conformed to the IOPs in Appendix H, but Gateway South does not. The IOPs will also be reviewed during the Corridor Study process, and the BLM and USFS committed to considering new IOPs for specific resources including, but not limited to, wildlife resources. While we support the use of IOPs as part of a broader framework to avoid, minimize, and mitigate the impacts of transmission corridor development, Defenders of Wildlife feels that the IOPs as identified in the WWEC PEIS are inadequate for the conservation of wildlife. The Western Solar Energy Program included "Design Features" that were intended to achieve the same outcomes as the IOPs – avoiding, minimizing, and/or mitigating the potential adverse effects of solar energy development. While the Design Features were developed to address solar energy development, most of them are applicable for transmission development in WWEC as well. The value of the Solar PEIS Design Features lies in their level of detail and specificity with regard to procedures and resources, the addition of which would greatly strengthen the WWEC IOPs. We recommend that the BLM and USFS incorporate the Design Features from the Solar PEIS into the WWEC as IOPs. The Solar PEIS Design Features are on pp. 43-145 of the Solar PEIS Record of Decision. As the Corridor Study is ongoing and results may not be available in time to include the new IOPs in the GWS FEIS, the BLM should review the Design Features established as part of the Western Solar Energy Program and incorporate any applicable as IOPs for GWS. The Final EIS should describe, similar to Appendix H of the Gateway West DEIS, how GWS reflects the IOPs as well as the Solar Energy Program Design Features. SI3x

Finally, a key purpose of the WWECs, reflected in the Settlement Agreement, is to consider how "Corridors [can] provide connectivity to renewable energy generation to the maximum extent possible while also considering other sources of generation, in order to balance the renewable

12

SI3x The BLM believes the intent of the design features presented in the Western Solar Energy Program is inherent in the design features and/or mitigation measures established for the Project.

Comment(s)

SI3 **Defenders of Wildlife (cont.)**

sources and to ensure the safety and reliability of electricity transmission."[6] Gateway South is part of Rocky Mountain Power's Energy Gateway transmission expansion program, meant to provide "power from existing, new renewable (e.g., wind, solar), and thermal (e.g., gas, coal) generation sources to meet growing customer needs, ease transmission congestion, and improve the flow of electricity throughout the West."[7] It is essential that in addition to fulfilling its reliability function, Gateway South serves as a conduit for responsibly-sited renewable energy generation from the Rockies and High Plains.

SI3y **Recommendation: Information from the Gateway South EIS should be reviewed as part of the WWEC Corridor Study, and any corridors deemed not suitable for transmission development based on wildlife and natural resource impacts during the Gateway South evaluation process should be removed from consideration as WWECs via the Gateway South Record of Decision and Land Use Plan Amendments.**

SI3z **Recommendation: Gateway South should include not only WWEC Interagency Operating Procedures, but also best management practices for avoidance, minimization, and mitigation from the Design Features developed as part of the BLMs Western Solar Energy Program. The Final EIS should describe how Gateway South addresses both the WWEC IOPs and the Solar Energy Program Design Features.**

SI3aa **Recommendation: The final alignment of Gateway South should be that which not only fulfills the reliability need, but also best facilitates responsible renewable energy development in the region.**

Introduction to our West-Wide Risk Analysis of WWECs

We note that while IM 2014-080 directs field officials to notify project proponents regarding potential for conflict in COCs, there may be other sources of conflict as well which should be taken account of in the decision-making process. Defenders has developed a geospatial analysis of potential wildlife risk from the WWECs and submitted it, along with an associated comment letter,[8] to the BLM and USFS as a response to their request for information to support the post-settlement Corridor Study and Regional Periodic Review of the WWECs (79 Fed. Reg. 17567, 3/28/14).

Our analysis included both coarse-scale and fine-scale data for selected species. Four coarse-scale, west-wide data sets were used in order to generate comparable scores for each WWEC segment: state **Crucial Habitat Assessment Tool (CHAT) values**,[9] **landscape permeability** (a model of habitat connectivity),[10] "**flowlines**" (a model of preferred routes across the landscape connecting permeable habitat),[11] and occurrences of NatureServe ranked G-1 and G-2 (globally **imperiled)**

---

[6] Settlement Agreement p. 6.

[7] GWS DEIS p. 1-1.

[8] Defenders of Wildlife (2014). GIS Risk Analysis of the West-Wide Energy Corridors (WWECs); Defenders of Wildlife Comment Letter re: Recommendations Related to the Request for Information: West-wide Energy Corridors Review, submitted May 27, 2014.

[9] Western Governors' Association Crucial Habitat Assessment Tool. Available at http://westgovchat.org/about.

[10] Theobald, D. M., Reed, S. E., Fields, K. and Soulé, M. (2012), Connecting natural landscapes using a landscape permeability model to prioritize conservation activities in the United States. Conservation Letters, 5: 123–133. doi: 10.1111/j.1755-263X.2011.00218.x

[11] Ibid.

Response(s)

SI3y The analysis and documentation in the EIS have been updated to be consistent with BLM WO-IM No. 2014-080, Policy Guidance for Use of Corridors Designated Pursuant to Section 368 of the Energy Policy Act of 2005 as Required by the Settlement Agreement in Wilderness Society v. United States USDI, No. 3:09-cv-03048-JW (D. N.D. Cal), which was issued on April 10, 2014. Several alternative routes and route variations are considered outside of Corridors of Concern. For the alternative routes and route variations considered that are in Corridors of Concern, selective mitigation measures were applied where possible for the resource issues identified as concerns raised in Wilderness Society v. The BLM has reviewed the Interagency Operating Procedures (IOPs) identified in 2009 BLM Resource Management Plan Amendments and Record of Decision to confirm the intent of the IOPs is inherent in the design features and/or selective mitigation measures established for the Project. See response to Comment SI3a.

SI3z See response to Comment SI3x.

SI3aa See response to Comment SI3a.

Comment(s)

Response(s)

SI3 | **Defenders of Wildlife (cont.)**

species by watershed.[12] Additionally, we examined several fine-scale, individual key species datasets and maps, including (but not limited to) Greater sage grouse. Figure 2 shows the major results of our analysis for WWEC segments that overlap with GWS.

Applicability of our risk analysis to GWS

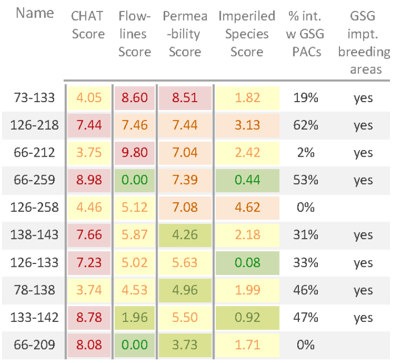
SI3ab
- **WWEC 73-133**: this segment overlaps in its entirety with the western-most portion of WYCO-C in Wyoming, and poses Very High risk to both landscape permeability and flowlines. We do not recommend selection of this route segment.

SI3ac
- **WWEC 126-218**: The COUT-A and COUT-B routes overlap with very small portions of this WWEC in eastern Utah. With a Very High risk score for CHAT resources and High scores for each of the other three categories, as well as a 62% overlap with greater sage-grouse Priority Areas for Conservation, we recommend routing to avoid the resources impacted by this segment.

SI3ad
- **WWEC 66-212**: This corridor was identified as “of concern,” in large part because of its proximity to portions of Arches National Park. In addition, it scores Very High risk to flowlines and High risk to permeability. It is a long segment with numerous GWS route alternatives overlapping it at different junctures. GWS route selection should avoid the issues of concern with this segment, as well as avoid Very High risk to the number and magnitude of flowline crossings and to landscape permeability. Work closely with state and federal wildlife and science agencies to ensure that connectivity is maintained, and where flowlines must unavoidably be crossed, minimize impacts to connectivity.

SI3ae
- **WWEC 66-259**: This corridor was identified as “of concern,” and is overlapped in its entirety by the COUT-A routes. With a Very High risk score for CHAT resources and a High risk score for for permeability, as well as a 53% overlap with greater sage-grouse Priority Areas for Conservation, we recommend routing to avoid this segment.

SI3af
- **WWEC 126-258**: This Corridor of Concern poses High risk to landscape permeability and imperiled species, and is overlapped for most of its length by the COUT-A and COUT-B routes.



Name	CHAT Score	Flow-lines Score	Permea-bility Score	Imperiled Species Score	% int. w GSG PACs	GSG impt. breeding areas
73-133	4.05	8.60	8.51	1.82	19%	yes
126-218	7.44	7.46	7.44	3.13	62%	yes
66-212	3.75	9.80	7.04	2.42	2%	yes
66-259	8.98	0.00	7.39	0.44	53%	yes
126-258	4.46	5.12	7.08	4.62	0%	
138-143	7.66	5.87	4.26	2.18	31%	yes
126-133	7.23	5.02	5.63	0.08	33%	yes
78-138	3.74	4.53	4.96	1.99	46%	yes
133-142	8.78	1.96	5.50	0.92	47%	yes
66-209	8.08	0.00	3.73	1.71	0%	

Figure 1: WWEC segments with some overlap with GWS, and results of Defenders' geospatial risk analysis. Scores in red are Very High risk relative to other segments for that category, scores in orange are High, yellow are Medium, light green are Low, and dark green are Very Low. WWEC segments 126-258, 66-212, and 66-259 in Utah were identified as “corridors of concern.”

---

[12] NatureServe Analysis of Imperiled or Federally Listed Species by HUC-12, October 2011. Note that this dataset, while extremely valuable in its detailed aggregation at the HUC-12 watershed level, does not represent the most recent available information from NatureServe (which updates its HUC-8 datasets more frequently). We used it in our analysis to provide a west-wide window onto local concentrations of imperiled species, but WWEC-specific analysis should identify best-available datasets in order to get a comprehensive understanding of potential impacts to imperiled species.

14

SI3ab Comment and route preference noted.

SI3ac Comment and route preference noted.

SI3ad Comment and route preference noted.

SI3ae Comment and route preference noted.

SI3af Comment noted.

Comment(s)

SI3 Defenders of Wildlife (cont.)

SI3ag

- **WWEC 138-143**: This segment overlaps with long portions of WYCO-D. The WWEC segment scores Very High Risk to CHAT resources, and has a 31% overlap with Greater sage-grouse PACs. If this route is used, we recommend following the National Technical Team's recommendations to exclude new infrastructure ROWs and avoid all new energy infrastructure development within Greater Sage-grouse PACs. Use the full mitigation hierarchy to avoid, minimize, and compensate for impacts within four miles of important sage-grouse breeding areas. Consult closely with state fish & game agencies and WGA to implement the full mitigation hierarchy of avoidance, minimization, and compensation for CHAT resources at "Very High" risk.

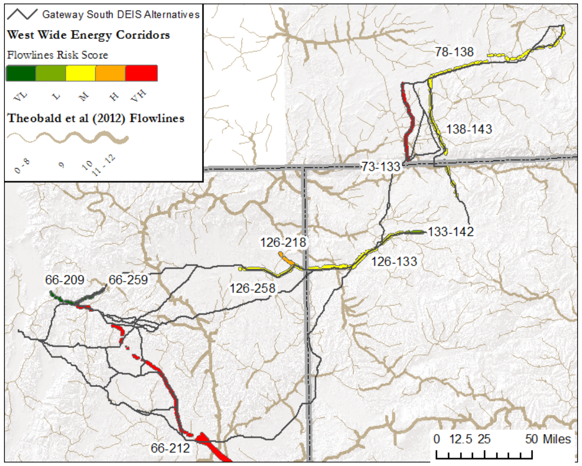


Figure 3: Flowlines, GWS segments, and WWECs scored by risk to flowlines.

SI3ah

- **WWEC 126-133**: All GWS route alternatives pass through this WWEC segment in northwest Colorado and northeast Utah. The WWEC segment scores Very High Risk to CHAT resources, and has a 33% overlap with Greater sage-grouse PACs. If this route is used, we recommend following the National Technical Team's recommendations to exclude new infrastructure ROWs and avoid all new energy

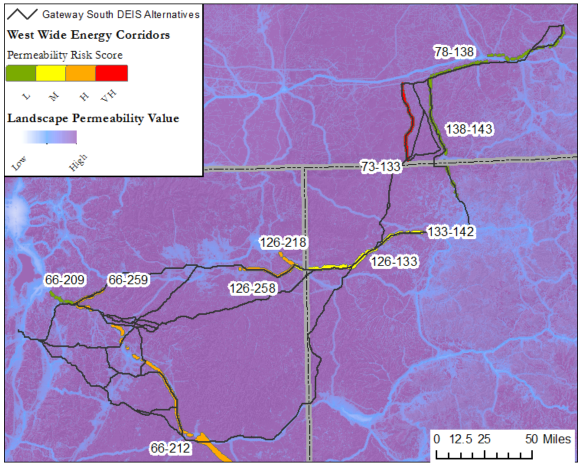


Figure 4: Landscape Permeability (Theobald et al 2012), GWS routes, and WWECs scored by risk to permeability.

Response(s)

SI3ag

Recommendation noted. BLM acknowledges the potential adverse impacts on biological resources along this segment. For this reason, this segment is not included as part of the Agency Preferred Alternative.

Under any of the alternative routes and route variations, the Applicant would develop a voluntary sage-grouse conservation and mitigation plan in coordination with the agencies for the Agency Preferred Alternative (refer to Appendix K). The mitigation plan will offer measures to avoid, minimize, or compensate for all Project effects characterized by the framework and identified in the EIS that could not be mitigated or avoided using measures in BLM or other agency plans, including losses of habitat services quantified using the HEA.

SI3ah

See response to Comment SI3ag.

Comment(s)

Response(s)

SI3 | **Defenders of Wildlife (cont.)**

SI3ah infrastructure development within greater sage-grouse PACs. Use the full mitigation hierarchy to avoid, minimize, and compensate for impacts within four miles of important sage-grouse breeding areas. Consult closely with state fish & game agencies and WGA to implement the full mitigation hierarchy of avoidance, minimization, and compensation for CHAT resources at "Very High" risk.

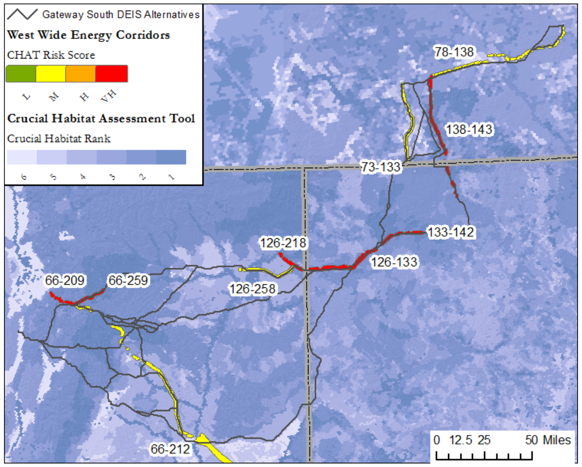


Figure 5: Crucial Habitat Assessment Tool (CHAT) values across the landscape, GWS segments, and WWECs scored by risk to CHAT resources.

SI3ai

- **WWEC 78-138**: All WYCO routes pass through or near substantial portions of this WWEC segment in Wyoming, which has a 46% overlap with greater sage-grouse PACs. If this route is used, we recommend following the National Technical Team's recommendations to exclude new infrastructure ROWs and avoid all new energy infrastructure development within greater sage-grouse PACs. Use the full mitigation hierarchy to avoid, minimize, and compensate for impacts within four miles of important sage-grouse breeding areas.

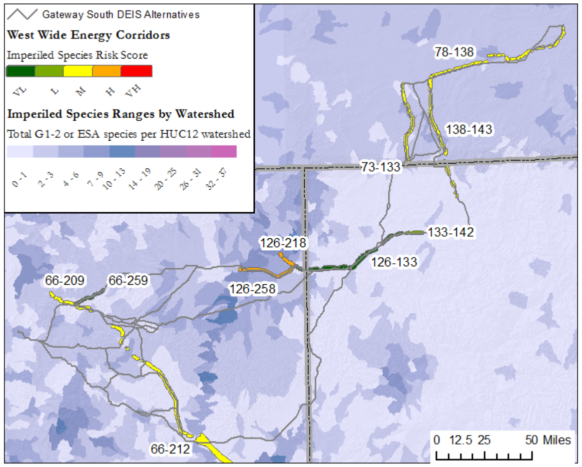

Gateway South DEIS Alternatives
West Wide Energy Corridors
Imperiled Species Risk Score
VL
L
M
H
VH
Imperiled Species Ranges by Watershed
Total G1-2 or ESA species per HUC12 watershed
0 - 1
2 - 3
4 - 6
7 - 9
10 - 13
14 - 19
20 - 25
26 - 31
32 - 37
78-138
138-143
73-133
133-142
126-218
126-133
126-258
66-209
66-259
66-212
0 12.5 25 50 Miles

Figure 6: Concentrations of imperiled species by HUC-12 watershed, GWS routes, and WWECs scored by risk to CHAT resources.

SI3aj

- **WWEC 133-142**: The WYCO-D routes pass through this segment in northwest Colorado. The WWEC segment scores Very High Risk to CHAT resources, and has a 47% overlap with Greater sage-grouse

SI3ai See response to Comment SI3ag.

SI3aj The analysis and documentation in the EIS have been updated to be consistent with BLM WO-IM No. 2014-080, Policy Guidance for Use of Corridors Designated Pursuant to Section 368 of the Energy Policy Act of 2005 as Required by the Settlement Agreement in Wilderness Society v. USDI, No. 3:09-cv-03048-JW (D. N.D. Cal), which was issued on April 10, 2014. Several alternative routes and route variations are considered outside of Corridors of Concern. For the alternative routes and route variations considered that are in Corridors of Concern, selective mitigation measures were applied where possible for the resource issues identified as concerns raised in Wilderness Society v. USDI. The BLM has reviewed the IOPs identified in 2009 BLM Resource Management Plan Amendments and Record of Decision to confirm the intent of the IOPs is inherent in the design features and/or mitigation measures established for the Project. Further, as explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

Comment(s)

Response(s)

SI3 **Defenders of Wildlife (cont.)**

SI3aj PACs. If this route is used, we recommend following the National Technical Team's recommendations to exclude new infrastructure ROWs and avoid all new energy infrastructure development within greater sage-grouse PACs. Use the full mitigation hierarchy to avoid, minimize, and compensate for impacts within four miles of important sage-grouse breeding areas. Consult closely with state fish & game agencies and WGA to implement the full mitigation hierarchy of avoidance, minimization, and compensation for CHAT resources at "Very High" risk.

- **WWEC 66-209**: The COUT-A, B, and C routes overlap with a very small portion of this WWEC segment in northeast Utah.

Conclusion

Thank you for the opportunity to submit comments on this project. We look forward to continuing to work with the BLM on refining this innovative approach to mitigation for Gateway South and future developments. If you have any questions, please contact jbelak@defenders.org.

Sincerely,

Jon Belak
Wildlife Biologist, Renewable Energy
Defenders of Wildlife
jbelak@defenders.org

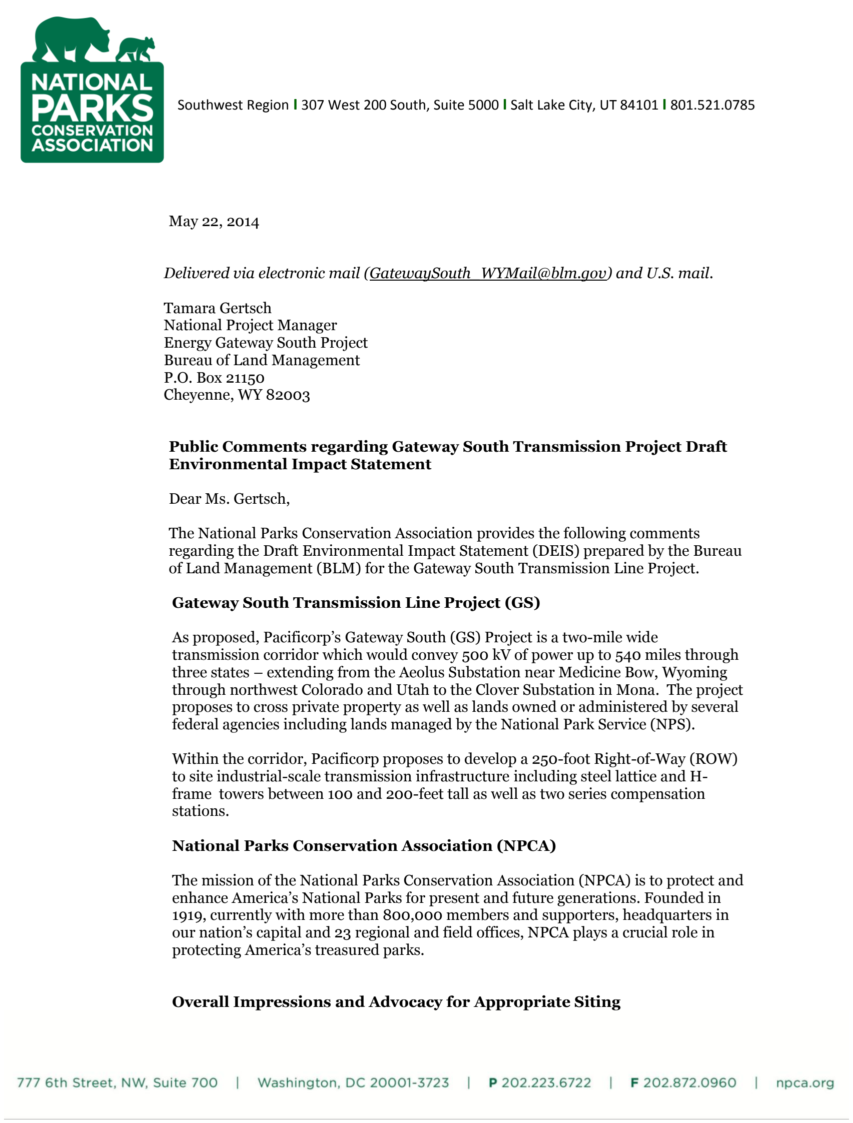
Eliza Cava
Policy Analyst, Renewable Energy & Wildlife
Defenders of Wildlife
ecava@defenders.org

Comment(s)

Response(s)

SI4

National Parks Conservation Association



NATIONAL PARKS CONSERVATION ASSOCIATION

Southwest Region | 307 West 200 South, Suite 5000 | Salt Lake City, UT 84101 | 801.521.0785

May 22, 2014

Delivered via electronic mail (GatewaySouth_WYMail@blm.gov) and U.S. mail.

Tamara Gertsch
National Project Manager
Energy Gateway South Project
Bureau of Land Management
P.O. Box 21150
Cheyenne, WY 82003

Public Comments regarding Gateway South Transmission Project Draft Environmental Impact Statement

Dear Ms. Gertsch,

The National Parks Conservation Association provides the following comments regarding the Draft Environmental Impact Statement (DEIS) prepared by the Bureau of Land Management (BLM) for the Gateway South Transmission Line Project.

Gateway South Transmission Line Project (GS)

As proposed, Pacificorp's Gateway South (GS) Project is a two-mile wide transmission corridor which would convey 500 kV of power up to 540 miles through three states – extending from the Aeolus Substation near Medicine Bow, Wyoming through northwest Colorado and Utah to the Clover Substation in Mona. The project proposes to cross private property as well as lands owned or administered by several federal agencies including lands managed by the National Park Service (NPS).

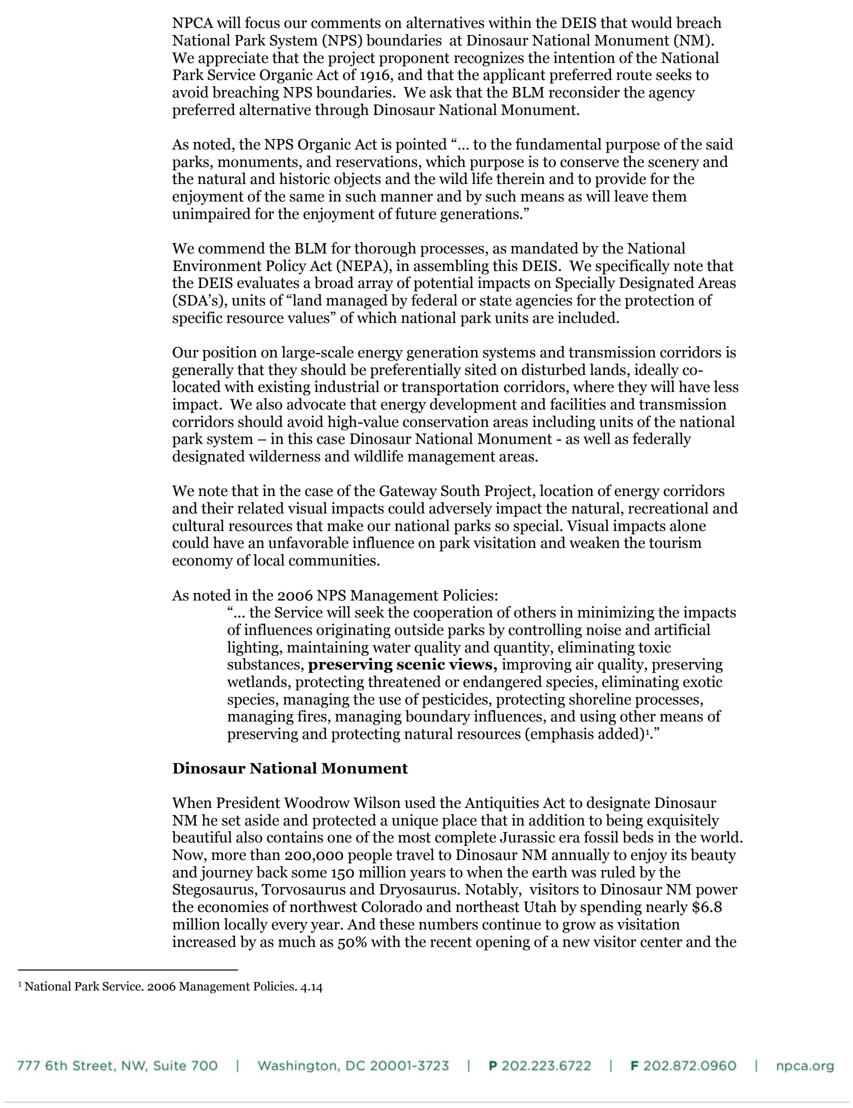
Within the corridor, Pacificorp proposes to develop a 250-foot Right-of-Way (ROW) to site industrial-scale transmission infrastructure including steel lattice and H-frame towers between 100 and 200-feet tall as well as two series compensation stations.

National Parks Conservation Association (NPCA)

The mission of the National Parks Conservation Association (NPCA) is to protect and enhance America's National Parks for present and future generations. Founded in 1919, currently with more than 800,000 members and supporters, headquarters in our nation's capital and 23 regional and field offices, NPCA plays a crucial role in protecting America's treasured parks.

Overall Impressions and Advocacy for Appropriate Siting

777 6th Street, NW, Suite 700 | Washington, DC 20001-3723 | P 202.223.6722 | F 202.872.0960 | npca.org



NPCA will focus our comments on alternatives within the DEIS that would breach National Park System (NPS) boundaries at Dinosaur National Monument (NM). We appreciate that the project proponent recognizes the intention of the National Park Service Organic Act of 1916, and that the applicant preferred route seeks to avoid breaching NPS boundaries. We ask that the BLM reconsider the agency preferred alternative through Dinosaur National Monument.

As noted, the NPS Organic Act is pointed "... to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

We commend the BLM for thorough processes, as mandated by the National Environment Policy Act (NEPA), in assembling this DEIS. We specifically note that the DEIS evaluates a broad array of potential impacts on Specially Designated Areas (SDA's), units of "land managed by federal or state agencies for the protection of specific resource values" of which national park units are included.

Our position on large-scale energy generation systems and transmission corridors is generally that they should be preferentially sited on disturbed lands, ideally co-located with existing industrial or transportation corridors, where they will have less impact. We also advocate that energy development and facilities and transmission corridors should avoid high-value conservation areas including units of the national park system – in this case Dinosaur National Monument - as well as federally designated wilderness and wildlife management areas.

We note that in the case of the Gateway South Project, location of energy corridors and their related visual impacts could adversely impact the natural, recreational and cultural resources that make our national parks so special. Visual impacts alone could have an unfavorable influence on park visitation and weaken the tourism economy of local communities.

As noted in the 2006 NPS Management Policies:

> "... the Service will seek the cooperation of others in minimizing the impacts of influences originating outside parks by controlling noise and artificial lighting, maintaining water quality and quantity, eliminating toxic substances, **preserving scenic views,** improving air quality, preserving wetlands, protecting threatened or endangered species, eliminating exotic species, managing the use of pesticides, protecting shoreline processes, managing fires, managing boundary influences, and using other means of preserving and protecting natural resources (emphasis added)[1]."

Dinosaur National Monument

When President Woodrow Wilson used the Antiquities Act to designate Dinosaur NM he set aside and protected a unique place that in addition to being exquisitely beautiful also contains one of the most complete Jurassic era fossil beds in the world. Now, more than 200,000 people travel to Dinosaur NM annually to enjoy its beauty and journey back some 150 million years to when the earth was ruled by the Stegosaurus, Torvosaurus and Dryosaurus. Notably, visitors to Dinosaur NM power the economies of northwest Colorado and northeast Utah by spending nearly $6.8 million locally every year. And these numbers continue to grow as visitation increased by as much as 50% with the recent opening of a new visitor center and the

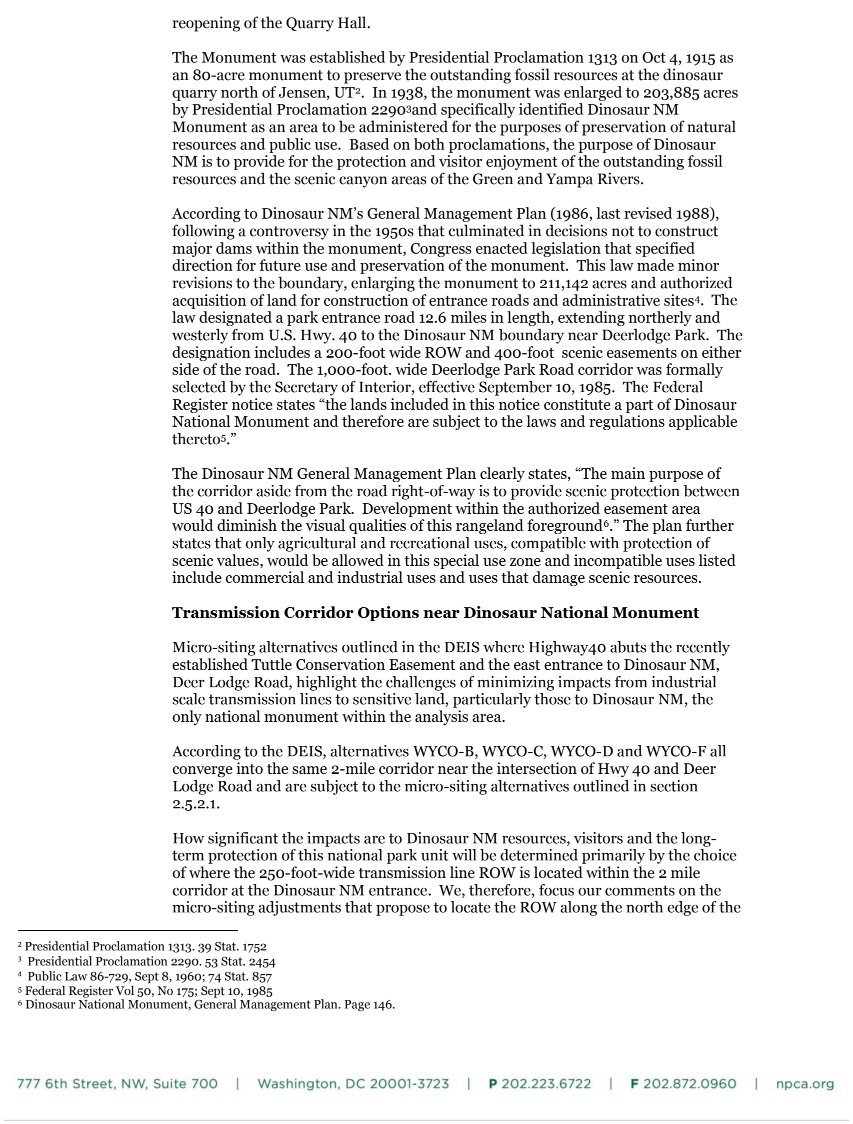
---

[1] National Park Service. 2006 Management Policies. 4.14

Comment(s)

Response(s)

SI4 | **National Parks Conservation Association (cont.)**



reopening of the Quarry Hall.

The Monument was established by Presidential Proclamation 1313 on Oct 4, 1915 as an 80-acre monument to preserve the outstanding fossil resources at the dinosaur quarry north of Jensen, UT[2]. In 1938, the monument was enlarged to 203,885 acres by Presidential Proclamation 2290[3] and specifically identified Dinosaur NM Monument as an area to be administered for the purposes of preservation of natural resources and public use. Based on both proclamations, the purpose of Dinosaur NM is to provide for the protection and visitor enjoyment of the outstanding fossil resources and the scenic canyon areas of the Green and Yampa Rivers.

According to Dinosaur NM's General Management Plan (1986, last revised 1988), following a controversy in the 1950s that culminated in decisions not to construct major dams within the monument, Congress enacted legislation that specified direction for future use and preservation of the monument. This law made minor revisions to the boundary, enlarging the monument to 211,142 acres and authorized acquisition of land for construction of entrance roads and administrative sites[4]. The law designated a park entrance road 12.6 miles in length, extending northerly and westerly from U.S. Hwy. 40 to the Dinosaur NM boundary near Deerlodge Park. The designation includes a 200-foot wide ROW and 400-foot scenic easements on either side of the road. The 1,000-foot. wide Deerlodge Park Road corridor was formally selected by the Secretary of Interior, effective September 10, 1985. The Federal Register notice states "the lands included in this notice constitute a part of Dinosaur National Monument and therefore are subject to the laws and regulations applicable thereto[5]."

The Dinosaur NM General Management Plan clearly states, "The main purpose of the corridor aside from the road right-of-way is to provide scenic protection between US 40 and Deerlodge Park. Development within the authorized easement area would diminish the visual qualities of this rangeland foreground[6]." The plan further states that only agricultural and recreational uses, compatible with protection of scenic values, would be allowed in this special use zone and incompatible uses listed include commercial and industrial uses and uses that damage scenic resources.

Transmission Corridor Options near Dinosaur National Monument

Micro-siting alternatives outlined in the DEIS where Highway40 abuts the recently established Tuttle Conservation Easement and the east entrance to Dinosaur NM, Deer Lodge Road, highlight the challenges of minimizing impacts from industrial scale transmission lines to sensitive land, particularly those to Dinosaur NM, the only national monument within the analysis area.

According to the DEIS, alternatives WYCO-B, WYCO-C, WYCO-D and WYCO-F all converge into the same 2-mile corridor near the intersection of Hwy 40 and Deer Lodge Road and are subject to the micro-siting alternatives outlined in section 2.5.2.1.

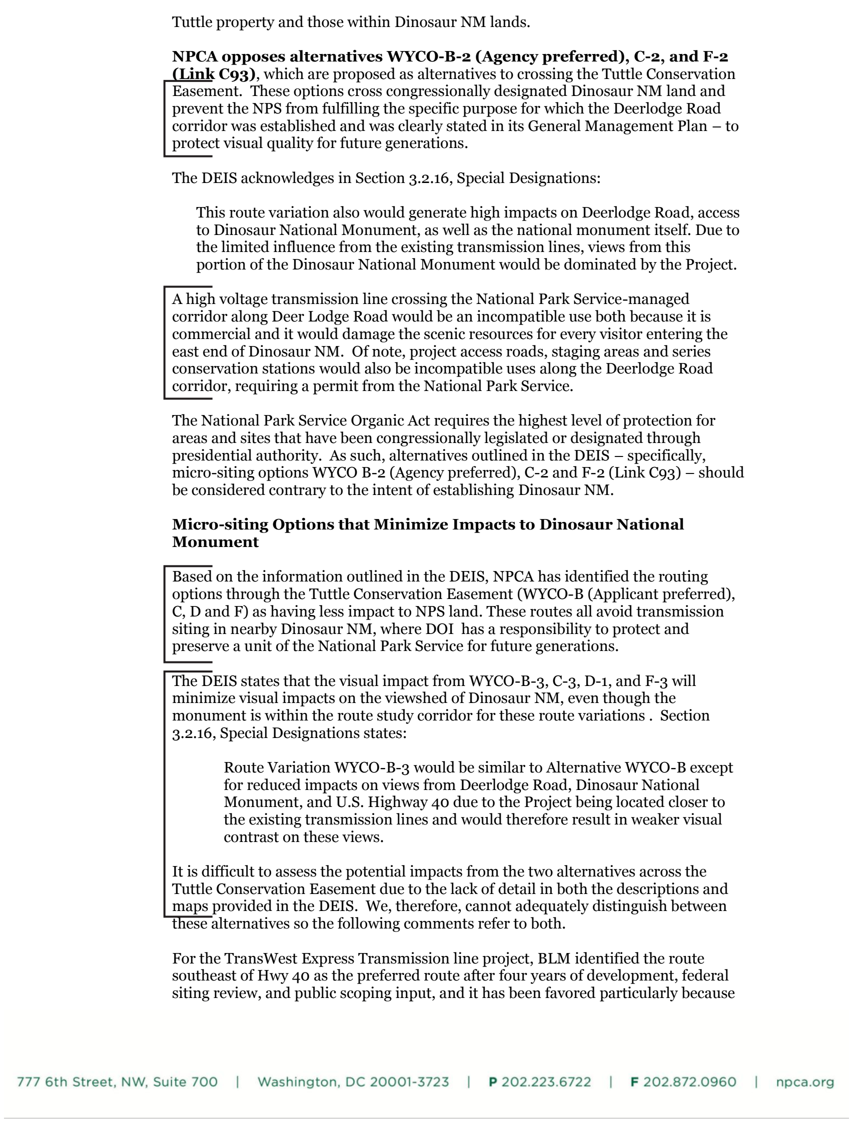
How significant the impacts are to Dinosaur NM resources, visitors and the long-term protection of this national park unit will be determined primarily by the choice of where the 250-foot-wide transmission line ROW is located within the 2 mile corridor at the Dinosaur NM entrance. We, therefore, focus our comments on the micro-siting adjustments that propose to locate the ROW along the north edge of the

---

[2] Presidential Proclamation 1313. 39 Stat. 1752
[3] Presidential Proclamation 2290. 53 Stat. 2454
[4] Public Law 86-729, Sept 8, 1960; 74 Stat. 857
[5] Federal Register Vol 50, No 175; Sept 10, 1985
[6] Dinosaur National Monument, General Management Plan. Page 146.

Comment(s)

SI4 | **National Parks Conservation Association (cont.)**



Tuttle property and those within Dinosaur NM lands.

SI4a **NPCA opposes alternatives WYCO-B-2 (Agency preferred), C-2, and F-2 (Link C93)**, which are proposed as alternatives to crossing the Tuttle Conservation Easement. These options cross congressionally designated Dinosaur NM land and prevent the NPS from fulfilling the specific purpose for which the Deerlodge Road corridor was established and was clearly stated in its General Management Plan – to protect visual quality for future generations.

The DEIS acknowledges in Section 3.2.16, Special Designations:

> This route variation also would generate high impacts on Deerlodge Road, access to Dinosaur National Monument, as well as the national monument itself. Due to the limited influence from the existing transmission lines, views from this portion of the Dinosaur National Monument would be dominated by the Project.

SI4b A high voltage transmission line crossing the National Park Service-managed corridor along Deer Lodge Road would be an incompatible use both because it is commercial and it would damage the scenic resources for every visitor entering the east end of Dinosaur NM. Of note, project access roads, staging areas and series conservation stations would also be incompatible uses along the Deerlodge Road corridor, requiring a permit from the National Park Service.

The National Park Service Organic Act requires the highest level of protection for areas and sites that have been congressionally legislated or designated through presidential authority. As such, alternatives outlined in the DEIS – specifically, micro-siting options WYCO B-2 (Agency preferred), C-2 and F-2 (Link C93) – should be considered contrary to the intent of establishing Dinosaur NM.

Micro-siting Options that Minimize Impacts to Dinosaur National Monument

SI4c Based on the information outlined in the DEIS, NPCA has identified the routing options through the Tuttle Conservation Easement (WYCO-B (Applicant preferred), C, D and F) as having less impact to NPS land. These routes all avoid transmission siting in nearby Dinosaur NM, where DOI has a responsibility to protect and preserve a unit of the National Park Service for future generations.

SI4d The DEIS states that the visual impact from WYCO-B-3, C-3, D-1, and F-3 will minimize visual impacts on the viewshed of Dinosaur NM, even though the monument is within the route study corridor for these route variations . Section 3.2.16, Special Designations states:

> Route Variation WYCO-B-3 would be similar to Alternative WYCO-B except for reduced impacts on views from Deerlodge Road, Dinosaur National Monument, and U.S. Highway 40 due to the Project being located closer to the existing transmission lines and would therefore result in weaker visual contrast on these views.

It is difficult to assess the potential impacts from the two alternatives across the Tuttle Conservation Easement due to the lack of detail in both the descriptions and maps provided in the DEIS. We, therefore, cannot adequately distinguish between these alternatives so the following comments refer to both.

For the TransWest Express Transmission line project, BLM identified the route southeast of Hwy 40 as the preferred route after four years of development, federal siting review, and public scoping input, and it has been favored particularly because

777 6th Street, NW, Suite 700 | Washington, DC 20001-3723 | **P** 202.223.6722 | **F** 202.872.0960 | npca.org

Response(s)

SI4a The assessment of compliance with the Dinosaur National Monument General Management Plan has been included in the Final EIS for all route variations in proximity to Deerlodge Road (refer to Appendix G).

SI4b See response to Comment SI4a. The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing the Applicant must acquire all access permissions and permits for lands outside of their jurisdiction.

SI4c Comment and route preference noted.

SI4d Based on comments received from the National Park Service, an appendix has been included in the Final EIS that describes in more detail the effects on Dinosaur National Monument from the different route variations in this area (refer to Appendix G).

Comment(s)

SI4 **National Parks Conservation Association (cont.)**

it parallels two existing transmission lines south of Hwy 40. Relocating the original proposal slightly north (WYCO-B-3, C-3, D-1 and F-3) means it could run as close as 250 feet to the existing southernmost line, the Bears Ears-Bonanza 345 kV Transmission Line, for the entire length of the 3-mile segment through the Tuttle property. Following existing linear features, as opposed to creating new "greenfield" corridors, minimizes the transmission line's overall environmental footprint.

SI4e

It was only after the establishment of the Tuttle Conservation Easement in August 2012 that alternative routes over National Park Service land and through undisturbed land was publicly proposed and considered. In his letter to the BLM, National Park Service and US Fish and Wildlife Service dated April 25, 2013, Colorado Parks and Wildlife former Director Rick Cables strongly opposed the crossing of three miles of the Tuttle Conservation Easement as requested by the TransWest Express Transmission project applicant. In his letter, former Director Cables sets up an either/or proposition between impacts to critical and threatened species habitat with the micro-siting option across the recently established Tuttle Conservation Easement and impacts to Dinosaur NM resources with the option across congressionally designated National Park System land.

This chokepoint is critical for wildlife habitat, including greater sage-grouse, elk, mule deer, greater prairie dog and black footed ferret, and the DEIS acknowledges there will be unavoidable impacts with each of the proposed options. The analysis concludes that these transmission line impacts to wildlife habitat would be relatively equal with any of the micro-siting alternatives. Pushing the transmission line northwest over Deear Lodge Road, however, would result in increased habitat fragmentation as construction would be located in an area with no existing overhead transmission lines. In addition to crossing National Park System land and fragmenting wildlife habitat, moving the ROW northwest places the transmission line significantly closer to lands with wilderness characteristics and citizen proposed wilderness.

SI4f

We recognize and appreciate the challenges Colorado Parks and Wildlife faces if they allow the new Tuttle Conservation easement to be breached by high voltage transmission lines, as outlined in their letter of April 2013. We do not believe, however, that pushing the 250-foot ROW into Dinosaur NM, is a viable solution to a complication created when the conservation easement was established in August 2012.

We agree with the conclusion drawn in the DEIS that micro-siting options through the Tuttle Conservation Easement remain a viable alternative to crossing Dinosaur NM and per 2006 NPS Park Management Policy, " ROWs may be issued only pursuant to specific statutory authority, and generally only if there is no practicable alternative to such use of NPS lands[7]." We understand this is a complicated decision and commit to working with the BLM, Colorado Parks and Wildlife and other stakeholders to identify an adequate solution.

Summary and Support for Cumulative Considerations

We thank the Applicant and Agency for analysis that supports the protection and preservation of lands congressionally and presidentially designated to be managed by the National Park Service. SI4g As such we support alternatives with the least conflict to Dinosaur NM and point out that these identified alternatives will require commitments for mitigation from Pacificorp and the BLM.

Furthermore, we point to the cumulative impacts of this project, and likely at least

---

[7] National Park Service, 2006 Management Policies, 8.6.4.1

Response(s)

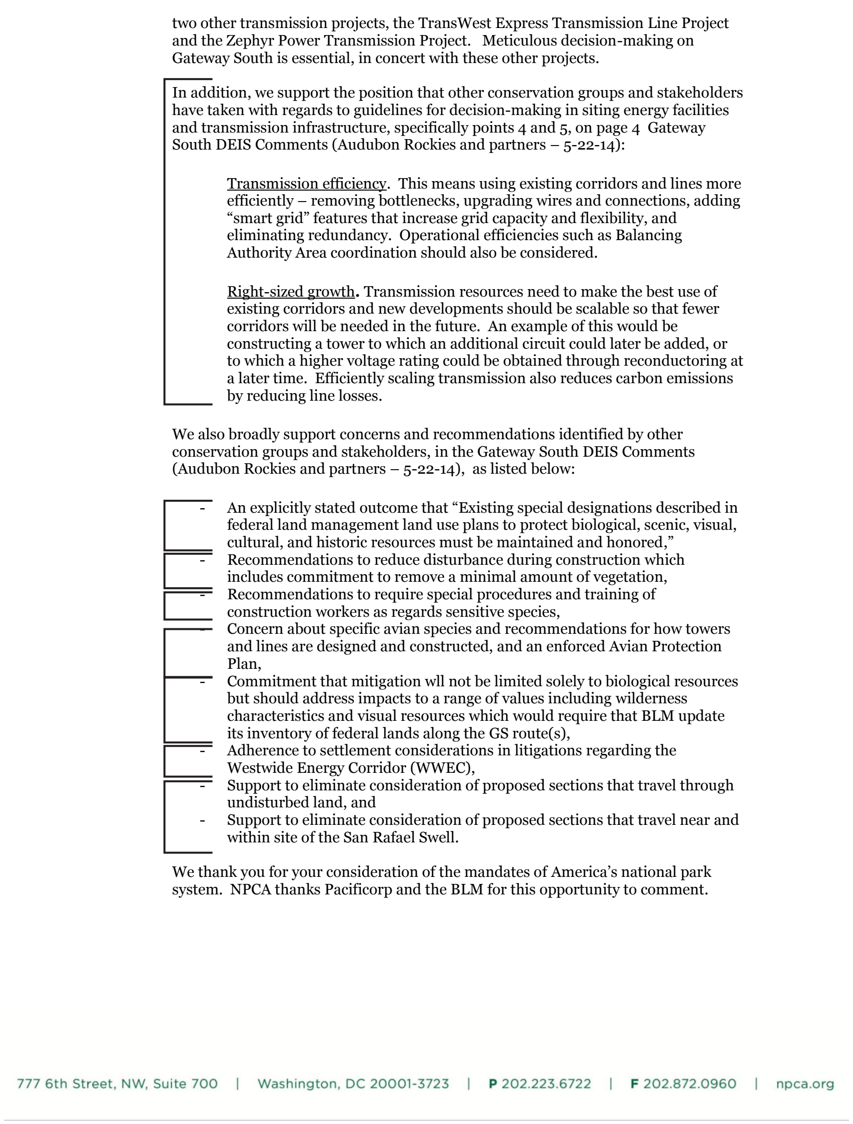
SI4e See responses to Comments SI4a and SI4b.

SI4f Comment and route preference noted.

SI4g Comment and route preference noted.

Comment(s)

SI4 **National Parks Conservation Association (cont.)**



two other transmission projects, the TransWest Express Transmission Line Project and the Zephyr Power Transmission Project. Meticulous decision-making on Gateway South is essential, in concert with these other projects.

SI4h In addition, we support the position that other conservation groups and stakeholders have taken with regards to guidelines for decision-making in siting energy facilities and transmission infrastructure, specifically points 4 and 5, on page 4 Gateway South DEIS Comments (Audubon Rockies and partners – 5-22-14):

> Transmission efficiency. This means using existing corridors and lines more efficiently – removing bottlenecks, upgrading wires and connections, adding "smart grid" features that increase grid capacity and flexibility, and eliminating redundancy. Operational efficiencies such as Balancing Authority Area coordination should also be considered.
>
> Right-sized growth**.** Transmission resources need to make the best use of existing corridors and new developments should be scalable so that fewer corridors will be needed in the future. An example of this would be constructing a tower to which an additional circuit could later be added, or to which a higher voltage rating could be obtained through reconductoring at a later time. Efficiently scaling transmission also reduces carbon emissions by reducing line losses.

We also broadly support concerns and recommendations identified by other conservation groups and stakeholders, in the Gateway South DEIS Comments (Audubon Rockies and partners – 5-22-14), as listed below:

- SI4i An explicitly stated outcome that "Existing special designations described in federal land management land use plans to protect biological, scenic, visual, cultural, and historic resources must be maintained and honored,"
- SI4j Recommendations to reduce disturbance during construction which includes commitment to remove a minimal amount of vegetation,
- SI4k Recommendations to require special procedures and training of construction workers as regards sensitive species,
- SI4l Concern about specific avian species and recommendations for how towers and lines are designed and constructed, and an enforced Avian Protection Plan,
- SI4m Commitment that mitigation wll not be limited solely to biological resources but should address impacts to a range of values including wilderness characteristics and visual resources which would require that BLM update its inventory of federal lands along the GS route(s),
- SI4n Adherence to settlement considerations in litigations regarding the Westwide Energy Corridor (WWEC),
- SI4o Support to eliminate consideration of proposed sections that travel through undisturbed land, and
- Support to eliminate consideration of proposed sections that travel near and within site of the San Rafael Swell.

We thank you for your consideration of the mandates of America's national park system. NPCA thanks Pacificorp and the BLM for this opportunity to comment.

Response(s)

SI4h	It is not the BLM's role or responsibility to verify the Applicant's interests and objectives for a proposed project. As a regulated utility, the need for transmission projects proposed by PacifiCorp is scrutinized by the Public Utilities Commission. The responsibility of the BLM and other land-management agencies is to respond the application for right-of-way across lands it administers.
SI4i	The management prescriptions for special designations and other management areas will be honored and selective mitigation measures will be applied to the resource being managed (e.g., biological resources) to reduce any effects to these managed areas.
SI4j	Comment noted.
SI4k	As identified in design features of the Proposed Action for environmental Protection (Table 2-8), Design Feature 28 states that prior to construction, the CIC would instruct all personnel on the protection of cultural, ecological, and other natural resources such as (a) federal and state laws regarding antiquities, paleontological resources and plants and wildlife, including collection and removal; (b) the importance of these resources; (c) the purpose and necessity of protecting them; and (d) reporting and procedures for stop work.
SI4l	See next page for respone to SI4l
SI4m	Selective mitigation measures identified for the Project would be applied to other resources as well as to biological resources (refer to Table 2-13).
SI4n	See next page for response to SI4n.
SI4o	Comment and route preference noted.

Comment(s)

Response(s) - continued

SI4 **National Parks Conservation Association (cont.)**

SI4I

As explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation, to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

Information on compensatory mitigation established for greater sage-grouse along the Agency Preferred Alternative would be included in the Final EIS. Any compensatory mitigation information for special status plants along the Agency Preferred Alternative also would be included in the Final EIS, if available.

Comment(s)

SI4 **National Parks Conservation Association (cont.)**

Sincerely,

Cory MacNulty
Program Manager
Southwest Region

Cc: Mark Foust, National Park Service
Patrick Malone, National Park Service
Andrew Montano, National Park Service

Response(s)

SI4n The analysis and documentation in the EIS have been updated to be consistent with BLM WO-IM No. 2014-080, Policy Guidance for Use of Corridors Designated Pursuant to Section 368 of the Energy Policy Act of 2005 as Required by the Settlement Agreement in Wilderness Society v. USDI, No. 3:09-cv-03048-JW (D. N.D. Cal), which was issued on April 10, 2014. Several alternative routes and route variations are considered outside of Corridors of Concern. For the alternative routes and route variations considered that are in Corridors of Concern, selective mitigation measures were applied where possible for the resource issues identified as concerns raised in Wilderness Society v. USDI. The BLM has reviewed the IOPs identified in 2009 BLM Resource Management Plan Amendments and Record of Decision to confirm the intent of the IOPs is inherent in the design features and/or selective mitigation measures established for the Project. Further, as explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

Comment(s)

Response(s)

SI5

Sierra Club

SIERRA CLUB
FOUNDED 1892

May 22, 2014

Delivered via electronic mail (GatewaySouth_WYMail@blm.gov) and U.S. mail (with attachments).

Tamara Gertsch
National Project Manager
Energy Gateway South Project
Bureau of Land Management
P.O. Box 21150
Cheyenne, WY 82003

Re: **Comments on Gateway South Transmission Draft Environmental Impact Statement**

Dear Ms. Gertsch:

These comments on the Draft Environmental Impact Statement (DEIS) for the proposed Gateway South transmission project (GWS) are submitted on behalf of the Sierra Club.

The Sierra Club is a national nonprofit organization of approximately 2.1 million members and supporters dedicated to exploring, enjoying and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club's goals include rapidly increasing our use of energy conservation and renewable energy to reduce global warming and end our nation's dependence on fossil fuels. However, we believe that renewable energy generation and transmission, like all development, should be sited and operated sustainably to avoid or minimize impacts to sensitive wildlife and landscapes.

The Sierra Club has worked cooperatively with other conservation organizations to submit National Environmental Policy Act of 1969 (NEPA) comments on proposed transmission lines we understood to carry remote renewable energy to cities and towns. We are concerned that GWS will impact sensitive wildlife including the Greater Sage-Grouse and undeveloped wildlands. Additionally, we are very concerned that the need for GWS is overestimated, that any need could be met in other ways with fewer impacts, and that GWS may carry electricity generated from fossil fuels. These concerns are reinforced by the results of a report prepared by Synapse Energy Economics, which is attached (Attachment A) and incorporated by this reference.

Comment(s)

Response(s)

SI5 **Sierra Club (cont.)**

Long-term, environmentally responsible success of BLM's renewable energy and transmission programs – and Interior's New Energy Frontier – depends on implementing policies and guidelines that prioritize renewable generation and transmission projects in locations that avoid or minimize conservation impacts. Transmission must be planned and sited to protect biological and cultural values while providing access to clean energy, enhancing energy efficiency efforts, and limiting use of polluting fossil fuels. Given the scale of renewable energy generation and transmission projects needed to meet the Secretary's and President's renewable energy goals, and very real physical constraints on where these lines can be located, resources should not be directed to projects which are unsuitable.

Our comments address the following weaknesses in the DEIS[1]:

- The DEIS did not adequately demonstrate the need for GWS in the purpose and need sections
- The DEIS did not adequately explore non-transmission alternatives
- The DEIS did not adequately explore the long-term impacts associated with the proposed transmission project
- The DEIS did not incorporate or analyze information on market development changes and how these changes will influence utilization of the proposed transmission line
- The DEIS did not include important information regarding how significant environmental impacts will be mitigated

I. THE DEIS DID NOT ADEQUATELY DEMONSTRATE THE NEED FOR THE PROPOSED TRANSMISSION PROJECT IN THE PURPOSE AND NEED SECTIONS

NEPA "emphasizes the importance of coherent and comprehensive upfront environmental analysis to ensure informed decision-making so that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." The DEIS for this proposed project is based on outdated information, and it far from certain that the project is needed at all.

---

[1] Additionally, we support many of the recommendations included in the comment letter, Gateway South Draft Environmental Impact Statement (EIS) Comments (TWS, Audubon Rockies and partners), specifically recommendations related to: design features to avoid, minimize or mitigate impact, and areas with high potential for biological impacts that should be avoided, although our recommendations do not propose or support a least impactful route. We also support the recommendations of Defenders of Wildlife regarding potential impacts to black-footed ferret and golden eagle.

Comment(s)

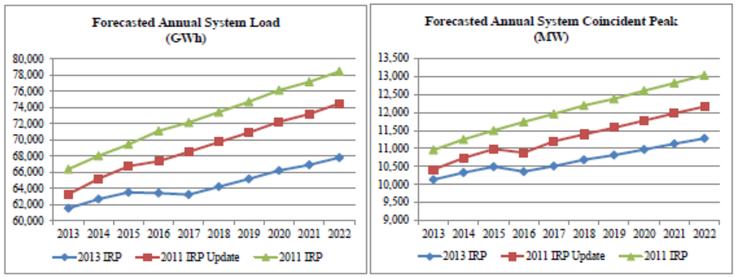
SI5 **Sierra Club (cont.)**

In addition, the DEIS provided an inadequate range of project alternatives and failed to properly consider the proposed project's impacts on climate change.

A. BLM MUST UPDATE THE DEIS TO REFLECT THE MOST RECENT PACIFICORP INTEGRATED RESOURCE PLAN.

SI5a The 2014 DEIS cites important data from PacifiCorp's 2011 Integrated Resource Plan (IRP),[2] which predates the DEIS by nearly three years even though the DEIS directly referenced PacifiCorp's 2013 IRP.[3] The use of old data compromises the DEIS's analysis because the 2013 IRP PacifiCorp lowered many of the growth forecasts cited in the DEIS. The following figures taken from the 2013 PacifiCorp IRP Update, dated April 2013, show how the load forecast from the 2011 IRP (green line with triangles) are much higher than the 2013 IRP (blue line with diamonds).

Figure 1: Figure ES.1 from PacifiCorp 2013 IRP



The difference in Forecasted Annual System Coincident Peak in 2023 is approximately 1,800 MW (13,000 MW - 11,200 MW = 1,800 MW). This is significant because GWS is projected to carry 1,500 MW of capacity, and the difference between the load forecast vintages exceeds the carrying capacity of the proposed line.[4] PacifiCorp's updated data calls into question the actual need for the proposed project. In order to comply with NEPA, BLM must revise the DEIS to reflect the most recent information on growth forecasts.

---

[2] US Department of Interior Bureau of Land Management. Draft Environmental Impact Statement and Land-use Plan Amendments for the Energy Gateway South Transmission Project. BLM/WY/PL-14/009+5101, Case File: WYW-174597. Volume1-A. February 2014.

[3] PacifiCorp. 2013 PacifiCorp Integrated Resource Plan Volume 1. March 30, 2013. Available at http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/PacifiCorp-2013IRP_Vol1-Main_4-30-13.pdf.

[4] BLM. (2014). Page S-3.

Response(s)

SI5a It is not the BLM's role or responsibility to verify the applicant's interests and objectives for a proposed project. As a regulated utility, the need for transmission projects proposed by PacifiCorp is scrutinized by the Public Utilities Commission. The responsibility of the BLM and other land-management agencies is to respond to the application for right-of-way across lands it administers. The most readily available information was used during development of the Draft EIS. The BLM understands that PacifiCorp prepares its IRP on a biennial schedule, filing its plan with state utility commissions during each odd numbered year. For even-numbered years, PacifiCorp updates its preferred resource portfolio and action plan by considering the most recent resource cost, load forecast, regulatory, and market information. Updates to the IRP are available to the public at http://www.pacificorp.com/es/irp.html. Based on the current schedule for the Final EIS, the 2013 IRP Update is the most current information. Appendix A of the Final EIS has been updated to reflect the 2013 IRP Update. BLM understands from PacifiCorp that preparation of the 2015 IRP Update is currently underway and will be available in March 2015.

Comment(s)

SI5 | **Sierra Club (cont.)**

SI5b The DEIS's description of PacifiCorp's energy usage growth and resource needs is stale information and must be updated. According to the DEIS, energy usage growth will be 2.3 percent per year for the next five years and 2 percent each year over the next ten years.[5] This information is based on the 2011 IRP and does not reflect the Company's current forecast.[6,7] The 2013 IRP projects a peak load growth compound annual growth rate of 1.2 percent from 2013-2022. Energy growth in the 2013 IRP is at an annual average growth rate of 1.08 percent for 2013-2022, well below the 2 percent noted in the DEIS.[8] The annual average growth rate for the five years (2013-2017) is 0.68 percent, well below the 2.3 percent for the next five years cited in the DEIS. BLM's energy growth rates for PacifiCorp must be updated to be consistent with PacifiCorp 2013 IRP values.

B. THE DEIS'S DESCRIPTION OF PACIFICORP'S RESOURCE NEEDS DID NOT REFLECT UPDATED INFORMATION AND, TO BE ACCURATE, MUST BE UPDATED.

According to the DEIS, PacifiCorp currently has 12,500 MW of existing resources and projects that it will need 15,000 MW of resources (including a 13 percent reserve margin) by 2023.[9] The DEIS summarized this information as a graphic in Figure 4 of Appendix A, which is shown below.[10]

---

[5] BLM. (2014). Page S-3.

[6] PacifiCorp. 2011 Integrated Resource Plan Volume 2. March 31, 2011. Table A.9. Page 11.

[7] Table A.9 indicates that the 2011-2020 average annual growth rate is 2.1 percent. The average annual growth rate for the five years 2011-2015 is 2.4 percent. These values are slightly different that the growth rates reported in the DEIS.

[8] PacifiCorp. 2013. Appendix A. Page 30.

[9] BLM. (2014). Page S-3.

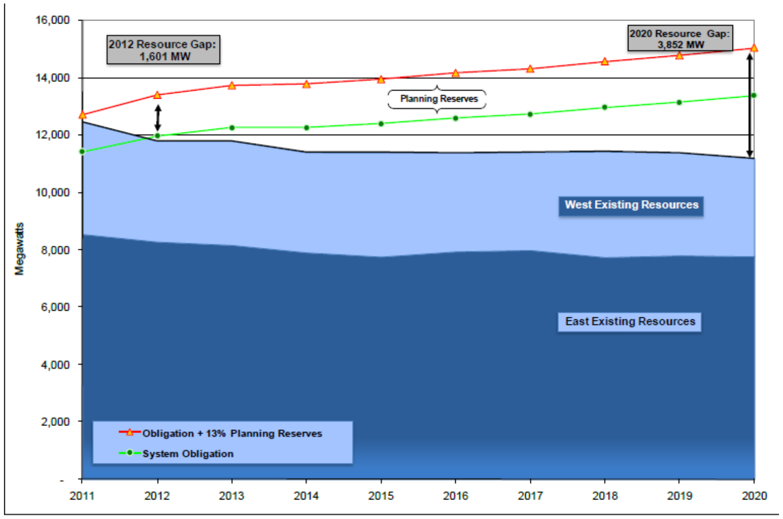
[10] BLM. (2014). Page A-8

Response(s)

SI5b See response to Comment SI5a.

SI5 **Sierra Club (cont.)**

Figure 2: PacifiCorp Existing Resources and Future Needs from Figure 4, Appendix A



SI5c

Figure 4 is taken from Figure ES.2 System Capacity Resource Gap from the PacifiCorp 2011 IRP.[11] The figure projects that PacifiCorp will have a resource gap of 3,852 MW by 2020.[12] Inconsistent with NEPA, the DEIS relied upon dated forecasts and did not reflect current forecasts made by PacifiCorp.

The 2013 IRP referenced in the DEIS contains different forecasts of existing capacity and resource needs. For example, the 2013 IRP uses a lower existing resource capacity of 10,010 MW (2013) versus 12,500 MW (2011) cited in the DEIS.[13] The drop in existing capacity reflects the current resource needs of PacifiCorp. The 2013 IRP forecasts resource needs (including reserves) of 11,762 MW, or 3,238 MW lower than the 15,000 MW resources needed in 2020

SI5c See response to Comment SI5a.

---

[11] PacifiCorp. 2011 Integrated Resource Plan Volume 1. March 31, 2011. Page 3.

[12] BLM (2014). Page A-7.

[13] PacifiCorp. (2013). Page 5.

Comment(s)

Response(s)

SI5

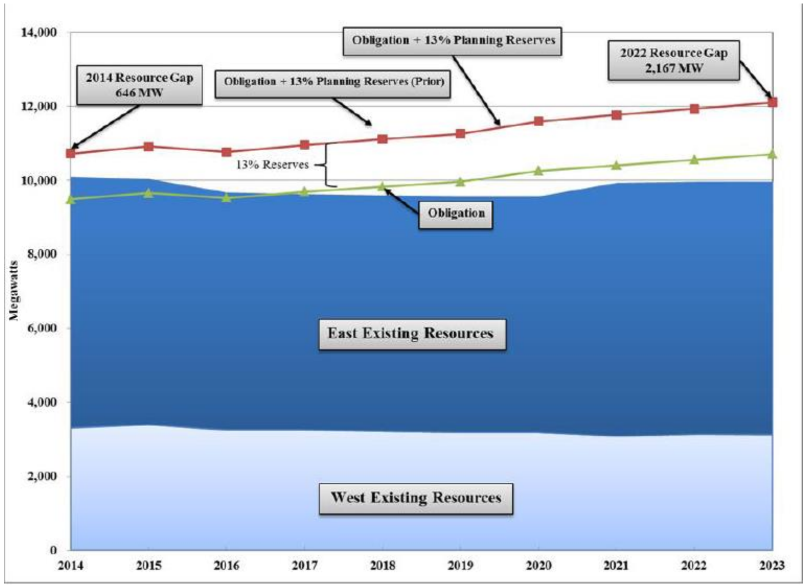
Sierra Club (cont.)

cited in the DEIS.[14] The 2013 IRP does forecast a resource gap of 2,274 MW in 2020, but this is 1,578 MW lower than the resource gap of 3,852 MW cited in the DEIS.[15]

SI5c

In March 2014, PacifiCorp released its 2013 IRP Update, which modifies the resource forecast.[16] The 2013 IRP Update adjusts the 2014 Existing Resource to 10,085 MW in 2014 and forecasts a resource need (including reserves) of 11,596 MW in 2020.[17] The 2013 IRP Update resource need is 166 MW lower than the 2013 IRP. The resource gap in 2020 in the 2013 IRP Update is 2,042 MW, or 1,810 MW lower than the gap cited in the DEIS. This is a considerable adjustment and is reflected in the following graph of the 2013 IRP System Capacity Position Trend.[18]

Figure 3: PacifiCorp 2013 IRP Update, System Capacity Position Trend



---

[14] PacifiCorp. (2013). Page 5.

[15] PacifiCorp. (2013). Page 5.

[16] PacifiCorp. PacifiCorp- 2013 IRP Update Chapter 3 Resource Needs Assessment Update. Dated March 31, 2014.

[17] PacifiCorp. (2014). Table 3.11. Page 30.

[18] PacifiCorp. (2014).Figure 3.2. Page 35.

Comment(s)		Response(s)	
SI5	**Sierra Club (cont.)**		
SI5c	For accuracy, the updates in the PacifiCorp load forecasts and resource needs must be factored into the DEIS. These updated values show that by relying on stale data the DEIS overstates the capacity gap, which in turn inflated the need for additional transmission capacity. In sum, the DEIS's purpose and need sections are based on the outdated premise that load growth justifies the proposed project.		
	C. THE DEIS FAILED TO EXAMINE THE EFFECT OF ALTERNATIVE TRANSMISSION PROJECTS ON THE NEED FOR GWS.		
SI5d	Finally, the proposed TransWest Express direct current (DC) transmission project[19] explicitly proposed to deliver energy and capacity from the proposed Chokecherry and Sierra Madre winds farm in southeastern Wyoming to the Las Vegas, NV area. While the routing of this proposed transmission line is slightly different from the proposed GWS project, there would be some redundancy. Furthermore, its wholesale market transacting capability would be similar to the proposed GWS project: it would allow wholesale transfers of energy from the Rocky Mountain region to the Desert Southwest region. The DEIS did not analyze the change in project need should the reasonably foreseeable TransWest Express project be built. While the proposed GWS project allows for the delivery of Wyoming energy to Utah and the TransWest Express project delivers fully through to Nevada, contracting some of the capacity available on the TransWest Express line and delivering it "back" to Utah could fully supplant the need for the proposed GWS project. The TransWest Express project combined with the reduced resource need described above seriously undermines the DEIS's rationale for the proposed project.	SI5d	See response to SI5a. The Project and the TransWest Express transmission project have very different interests and objectives and project descriptions. The analysis of (1) the change in need for transmission capacity due to approval of other transmission projects and (2) the extent to which the Applicant can achieve reliability goals through alternatives to transmission lines is outside of the responsibility and authority of the BLM and USFS and beyond the scope of analysis of this EIS. Finally, because the Zephyr transmission project does not have an active right-of-way application with BLM or USFS, that project is not considered reasonably foreseeable and is not included in the analysis.
SI5e	Another transmission alternative that the DEIS failed to consider is the proposed Zephyr direct current (DC) line that would also deliver energy and capacity from southeastern Wyoming to the Las Vegas, NV area.[20] It, too, would follow a similar path as the proposed GWS project.[21] Although this proposed project would be a high voltage DC line between Wyoming and Nevada, the DEIS did not consider the possibility of contracting some of the capacity available on the Zephyr line and delivering it "back" to Utah – which could fully supplant the need for the proposed GWS project.	SI5e	See response to Comment SI5d.
SI5f	Lastly, we note that other proposed transmission projects would bolster import capacity to the Las Vegas area: projects under consideration by Great Basin Transmission (Southwest Intertie Project) and Nevada Power and Sierra Pacific Power (from western central Nevada through the Amargosa Valley towards Las Vegas) could lead to increased availability of power from the Las	SI5f	See response to Comment SI5d.

---

[19] See http://www.transwestexpress.net/ for summary description of the TransWest Express project.

[20] See http://www.datcllc.com/datc-projects/zephyr/faqs/ for summary description of the Zephyr project.

[21] http://www.wecc.biz/Planning/TransmissionExpansion/Map/Pages/default.aspx

7

Comment(s)	Response(s)
SI5 **Sierra Club (cont.)**	
SI5f Vegas area to PacifiCorp's Utah load areas.[22] These projects too can be considered as alternative forms of western region transmission that could mitigate the need for the Gateway South project.	
II. THE DEIS DID NOT ADEQUATELY EXPLORE NON-TRANSMISSION ALTERNATIVES The discussion of alternatives is the "heart" of the NEPA process.[23] NEPA requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[24] An EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project in order to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision-maker and the public."[25]	
SI5g The DEIS briefly considered energy efficiency and demand response, but only concluded that "Energy Efficiency and Demand Response are valuable Tools that the Applicant is using and will continue to use to manage the demand and consumption of energy."[26] The DEIS did note recent PacifiCorp energy efficiency and demand response programs and referenced a 2013 Cadmus Demand Side Management potential study.[27,28] The PacifiCorp 2013 IRP included three demand-side management programs as existing resources that lower the load forecast by 653 MW in 2013 to 639 MW from 2015 onward.[29] The 2011 IRP incorporated 556 MW of demand-side management programs.[30] The Cadmus Group's 2013 potential study identified 6,797 MW of demand-side management technical potential in 2032 and 884 MW of Achievable Technical and Market Potential.[31] Additional demand-side management alternatives should be explored more comprehensively as a non-transmission alternative that could defer or eliminate the need of the proposed transmission project.	SI5g See response to Comment SI5a.
SI5h As noted above, the TransWest Express, Zephyr and Gateway South proposals are three major transmission projects that could run between Wyoming to Nevada or Utah; BLM should consider investigating the impact of the three projects comprehensively rather than separately as single	SI5h See response to Comment SI5d.

---

[22] See http://www.swipos.com/ for summary description of the Southwest Intertie Project.
[23] 40 C.F.R. § 1502.14.
[24] 42 U.S.C. § 4332(2)(E).
[25] 40 C.F.R. § 1502.14(a).
[26] BLM. (2014). Page 2-123.
[27] BLM. (2014). Page 2-122.
[28] Cadmus Group. Assessment of Long-Term, System-Wide Potential for Demand-Side and Other Supplemental Resources, 2013-2032 Volume I. March 2013.
[29] PacifiCorp. (2013). Chapter 5 Resource Needs Assessment. Page 90.
[30] PacifiCorp. (2011). Chapter 5 Resource Needs Assessment. Page 91
[31] Cadmus. (2013). Page 2.

Comment(s)

SI5 **Sierra Club (cont.)**

SI5h projects independent of another. BLM should consider a NTA alternative that examines the impact of permutations of the three different proposals to see if all three projects are needed.

III. THE DEIS FAILED TO ADDRESS HOW MARKET DEVELOPMENTS CHANGES WILL INFLUENCE UTILIZATION OF THE PROPOSED TRANSMISSION LINE

SI5i The DEIS contains no modeling information on changes to wholesale electric power transactions with the line in place that would affect the impacts of the line. PacifiCorp may soon (October, 2014) be part of the California Independent System Operator (CAISO) energy imbalance market, with the capability of delivering its resources into the California market. This market development, coupled with the presence of increased transmission capacity from the Carbon County area, has the potential to dramatically increase the level of coal-fired energy generation in the PacifiCorp region for ultimate delivery (as part of a portfolio of resources) to California. Some form of electric power sector production cost modeling should be undertaken as part of the environmental impact assessment in order to gauge such potential outcomes.

SI5j Redundancy, reliability and grid upgrades are among the leading justifications for GWS. Because the DEIS failed to adequately disclose the need for the proposed project and did not describe or evaluate a reasonable range of alternatives, a revised DEIS should consider the extent to which reliability goals can be achieved through less environmentally damaging means.

IV. THE DEIS DID NOT ADEQUATELY EXPLORE THE LONG-TERM IMPACTS ASSOCIATED WITH THE PROPOSED TRANSMISSION PROJECT

A. THE DEIS FAILED TO DISCUSS IMPACTS OF LOCATING WITHIN CORRIDORS OF CONCERN

As directed by Section 368 of the Energy Policy Act of 2005, BLM and US Forest Service (USFS) undertook a programmatic environmental impact statement designating right-of-way (ROW) corridors across public lands in eleven Western states in order to streamline and facilitate the siting of linear energy infrastructure (pipelines and transmission lines). However, the original West Wide Energy Corridor (WWEC) designations, proposed in 2009, did not do enough to connect renewable (rather than fossil fuel-generated) energy to towns and cities, did not provide enough opportunity for public input on their construction, and did not adequately analyze potential impacts on wildlife and the environment. In response, Sierra Club joined fellow conservation organizations and one county in challenging the designation of the originally proposed corridors. The litigation resulted in a settlement agreement (*The Wilderness Society et al. v. United States Department of Interior et al.* (Case No 3:09-cv-03048-JW [Northern District of California]) in which the agencies agreed to review the corridors to address these issues. Pursuant to the settlement agreement, the agencies developed a work plan for initiating a Corridor Study to assess the overall usefulness of the corridors and review corridor placement, utilization, and the use of Interagency Operating Procedures. Following the Corridor Study, the

Response(s)

SI5i The BLM understands from the Applicant that the Project would not provide a direct intertie to the California Independent System Operator or any other energy imbalance market entity, including NV Energy (assuming that NV Energy becomes an energy inbalance market entity no earlier than October 1, 2015).

SI5j See response to Comment SI5a.

Comment(s)

SI5 **Sierra Club (cont.)**

agencies will initiate the first Regional Periodic Review of corridor designations, and develop a corridor monitoring plan to support the study. Parallel to initiating the Corridor Study and Regional Periodic Reviews of WWEC designations, the BLM issued Instruction Memorandum No. 2014-080 on April 7, 2014. IM 2014-080 instructs field office officials to encourage applicants to site projects within the WWECs as currently designated, and to make project proponents aware that siting projects within "Corridors of Concern" (COCs) as identified in the Settlement Agreement may:

- Involve significant environmental impacts
- Include preparation of an environmental impact statement
- Involve substantially increased or extensive mitigation measures such as regional or off-site mitigation to compensate for impacts to sensitive resources
- Include consideration of alternatives outside the corridor and consideration of an alternative that denies the requested use
- Include amendment of the applicable land use plan to modify or delete the COC and designate an alternative corridor
- Be challenged

SI5k The DEIS identified that the proposed GWS contains three Corridors of Concern. The three corridors are listed in the DEIS in Table I-2 and noted in Table 3-146.[32,33] The DEIS failed to detail how the proposed project facilitates renewable energy and avoids environmentally sensitive areas. Specifically, all three Corridors of Concern mention the access to coal-fired power plants.[34] While the DEIS notes "the Project alternative routes that are currently located within corridors of concern (Table 3-146) will require additional assessment to ensure all impacts are addressed,"[35] it does not appear that the additional assessment is included in the
SI5l DEIS. Additionally, some of the alternative routes for GWS fall within West Wide Energy Corridors, which would be the lowest-impact routes under consideration in the region[36], yet BLM and PacifiCorp are not proposing to use these West Wide Energy Corridors for GWS.

B. THE DEIS FAILED TO EXAMINE CLIMATE CHANGE IMPACTS

President Obama has been very clear that the nation must drastically cut carbon pollution to "protect the health of our children and move our economy toward American-made clean energy

---

[32] BLM (2014). Chapter I- Purpose and Need. Page 1-19.

[33] BLM (2014). Chapter 3 Affected Environment and Environmental Consequence. Page 3-645.

[34] BLM (2014). Chapter 3 Affected Environment and Environmental Consequence. Page 3-645.

[35] BLM (2014). Chapter 3 Affected Environment and Environmental Consequence. Page 3-645.

[36] For example, segments W111 and C13 follow West Wide Energy Corridors and are the lowest-impact routes under consideration in the region, but they are not the BLM's preferred alternative or the applicant's proposed route

Response(s)

SI5k The analysis and documentation in the EIS have been updated to be consistent with BLM WO- IM No. 2014-080, Policy Guidance for Use of Corridors Designated Pursuant to Section 368 of the Energy Policy Act of 2005 as Required by the Settlement Agreement in Wilderness Society v. USDI, No. 3:09-cv-03048-JW (D. N.D. Cal), which was issued on April 10, 2014. Several alternative routes and route variations are considered outside of Corridors of Concern. For the alternative routes and route variations considered that are in Corridors of Concern, selective mitigation measures were applied where possible for the resource issues identified as concerns raised in Wilderness Society v. USDI. The BLM has reviewed the IOPs identified in 2009 BLM Resource Management Plan Amendments and Record of Decision to confirm the intent of the IOPs is inherent in the design features and/or selective mitigation measures established for the Project. Further, as explained in Section 2.5.1.2 and Appendix E of the Final EIS, the sequence of mitigation action would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation).

SI5l The first two criteria considered by the Applicant when identifying preliminary alternative routes during their initial feasibility studies conducted by the Applicant were (1) presence of designated or proposed utility corridors and (2) presence of other existing linear facilities. During their review of the alternative routes and route variations, the BLM and USFS have endeavored to maintain the use of federally designated utility corridors and the use of federal lands to the extent possible (i.e., where suitable when reviewing for environmental, geographic, or engineering/electric system reliability concerns).

Comment(s)

SI5 **Sierra Club (cont.)**

sources that will create good jobs and lower home energy bills."[37] Reducing the generation and transmission of harmful fossil fuels is central to the President's plan. In a few cases, new large-scale transmission will be needed to carry remote renewable energy resources to load centers. However, renewable energy and associated transmission development must be carefully

SI5m scrutinized through the NEPA process. Given the urgency of climate change, the BLM can no longer casually grant transmission rights of way based on cursory showings of need by the applicant. SI5n Equally important, federal agencies must also investigate and disclose a proposed project's potential impacts on climate, and propose all feasible non-transmission alternatives.

SI5o Here, the DEIS fails to address comprehensively the GWS' impacts on global climate change. Along with the President's Climate Action Plan, NEPA requires that federal agencies "recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment."[38]

SI5p The DEIS failed to follow both NEPA and the President's Climate Action Plan by omitting an analysis of the type of energy generating resources that would benefit from the proposed line. Absent this essential analysis, neither the BLM nor the public have a clear idea of whether new renewable resources or existing fossil fuel generation will utilize the line. The DEIS must make some effort to assess how the line will be utilized. Rather than engage in the rigorous analysis required by NEPA, the DEIS evaded this critical issue with the following language: "The GHG emissions are regulated under federal requirements that include mandatory reporting and GHG emission permits for major sources. It is not expected that the types of sources that will be part of the Project would be subject to these Rules."[39] With this conclusory statement, the DEIS ignored the very real fact that PacifiCorp could interconnect its major fossil fuel generating stations to the Gateway Project.

SI5q Although the DEIS narrowly analyzed carbon dioxide emissions associated with the project's construction and operation, it failed to consider broad-scale methods of reducing carbon emissions through alternatives (non-transmission or duplicative siting) to the proposed project in order to minimize impacts on climate change.

---

[37] The President's Climate Action Plan (June 2013). Page 5. http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf

[38] 42 U.S.C. § 4332(f).

[39] BLM. (2014) Chapter 3 Affected Environment and Environmental Consequence. Page 8.

Response(s)

SI5m See respone to Comment SI5a. Regarding the scope of analysis presented in the EIS, it is beyond the scope of existing science to relate a specific source of GHG with the creation (or mitigation) of any specific climate-related environmental effects. Further, since the specific effects of a particular action, which may contribute to or mitigate against climate change, cannot be determined, it is also not possible to determine whether any of these particular actions will lead to significant climate-related environmental effects. Finally, there are still not regulatory standards for climate change. Thus, the BLM believes the analysis in the EIS represents the best available science as required by the CEQ guidelines.

SI5n The GHG of the proposed project have been quantified and were presented in the Draft EIS. Construction emissions will be temporary. Operation emissions, consisting of sulfur hexafluoride emissions from circuit breakers at the series compensation stations, have also been quantified and will be negligible.

As noted in the Draft EIS, because GHG emissions from proposed projects contributes to climate change on a global scale, project-specific impacts of GHG emissions on the local environment cannot be quantified. It is beyond the scope of existing science to relate a specific source of GHG emissions with the creation (or mitigation) of any specific climate-related environmental effects. Further, since the specific effects of a particular action, which may contribute to or mitigate against climate change, cannot be determined, it is not possible to accurately predict the effect of resource management-level decisions from this project-specific effort on global climate change.

SI5o GHG emissions from Project construction would be temporary. Operation emissions, consisting of sulfur hexafluoride emissions from circuit breakers at the series compensation stations, would be negligible. As previously explained, BLM does not have an established mechanism to accurately predict the effect of resource management-level decisions from this project-specific effort on global climate change.

SI5p See next page for response to SI5p.

SI5q See next page for response to SI5q.

Comment(s)

SI5 **Sierra Club (cont.)**

Given GWS would have a life of at least 50 years[40] adequately evaluating the long-term impact of the proposed project to facilitate renewables and to minimize access to coal-fired plants is critical.

C. *THE DEIS FAILED TO ADEQUATELY ANALYZE IMPACTS ON CONSERVATION OF GREATER SAGE-GROUSE*

GWS comes at a critical time for the conservation of Greater Sage-Grouse. This "warranted but precluded" candidate species requires management and protection focused on ensuring local conservation success, in conjunction with an overall strategy to incorporate indirect and cumulative effects and to provide for range wide persistence for the species. Using objective methods based on the most complete and current science is the key component of such a strategy. *Avoidance of critical habitat and minimizing disturbances always should occur before compensatory mitigation and is key for Greater Sage-Grouse conservation.* However, as described in greater detail below, the requisite habitat analysis has not been completed, nor does the DEIS contain minimization measures sufficient to enable Greater Sage-Grouse conservation in an area identified as pivotal for conservation.

A USFWS 2010 Finding[41] identified power lines as directly affecting Greater Sage-Grouse "by posing a collision and electrocution hazard" (Braun 1998, pp. 145-146; Connelly *et al*. 2000a, p. 974), having indirect effects by decreasing lek recruitment (Braun *et al*. 2002, p. 10), increasing predation (Connelly *et al*. 2004, p. 13-12), fragmenting habitat (Braun 1998, p. 146), and facilitating the invasion of exotic annual plants (Knick *et al*. 2003, p. 612; Connelly *et al*. 2004, p. 7-25) (page 18). Additionally, sage-grouse could be impacted through a direct loss of habitat and human activity (especially during construction periods)[42]. The Gateway West FEIS noted that recent research identified the best predictors between extirpated and occupied ranges to include distance to transmission lines (Wisdom et al 2011).[43]. Knick et al. 2013 further emphasizes intolerance of grouse to human disturbance and development, reporting that 99% of active leks in the species' western range were in landscapes with less than 3% disturbance.

---

[41] US Fish and Wildlife Service 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. 2010. 50 CFR Part 17, FWS-R6-ES-2010-0018, MO 92210-0-0008-B2]. http://www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf

[41] US Fish and Wildlife Service 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. 2010. 50 CFR Part 17, FWS-R6-ES-2010-0018, MO 92210-0-0008-B2]. http://www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf

[42] USFWS 2010 at 44

[43] Gateway West FEIS at 3.11-74

12

Response(s)

SI5p

See response to Comment SI5m.

With climate change, increased peak demands for electricity for air conditioning will deplete electrical generation and distribution capacities. The EPA projects that climate change could increase the need for additional electric generating capacity by 10 to 20 percent by 2050. Conversely, the demand for natural gas, oil, and wood for heating will decrease. Electricity supply will also be affected by increased year-to-year variability of precipitation that is expected (U.S. Global Change Research Program 2012; EPA 2014). Fossil fuel and nuclear power plants that use water for cooling will have reduced efficiencies with higher air and water temperatures. (Tidwell et al. 2013)

Higher temperatures will also negatively impact the capacity of transmission lines and transformers. Transmission lines incur incremental power losses as the temperatures of conductors increase. Low wind speeds on extremely hot days may result in conductor temperatures that can permanently damage transmission lines. Higher ambient temperatures also reduce the peak-load capacity of transformers and increase the risk of catastrophic failure. Transmission systems will be at increased risk of loss or damage due to wildfires. The Project will contribute to a part of the President's Climate Action Plan (President of the United States 2013), which focuses on expanding and modernizing the electric grid to meet these challenges.

The time required to add significant transmission infrastructure is often longer than adding generation resources or securing third-party resources. Transmission additions must be integrated into regional plans and then permits must be obtained to site and construct the physical assets. Inadequate transmission capacity limits the ability to access what would otherwise be cost-effective generating resources, including renewables. As a result, the specific generation resources that would connect with the proposed transmission line are not known at this time and their GHG and impacts, therefore, cannot be quantified.

Comment(s)

Response(s) - continued

SI5 **Sierra Club (cont.)**

SI5q

An analysis of GHG emissions from nontransmission or duplicative siting alternatives is outside the scope of the Draft EIS. The suggested alternatives do not address the purpose and need for the Project, which is to alleviate constraints within the Applicant's existing transmission system and improve system reliability to ensure sufficient transmission capacity to meet the electrical demands of all its customers now and into the future.

It should be noted that alternatives aimed at reducing carbon emissions are not without complexities and negative impacts of their own. The U.S. Department of Energy, Office of Science, has analyzed the interaction of climate with energy, water, and land and reviewed the pros and cons of various mitigation measures aimed at decreasing carbon emissions (Skaggs et al. 2012). Mitigation measures evaluated included increasing energy efficiency, switching from coal to natural gas fuels, expanding carbon capture and sequestration at fossil-fueled power plants, expanding nuclear power, expanding wind power, expanding large-scale photovoltaic technologies, expanding solar thermal technologies, expanding hydropower, investing in smart grid/demand response technologies, expanding biomass production for power generation and biofuels, and reforestation/afforestation measures. Of the technologies and activities analyzed, only investing in smart grid/demand response technologies had no negative implications. Negative impacts of the other mitigation measures ranged from increased water use per unit of energy produced or for gas well stimulation, increased GHG emissions from land clearing, wildlife habitat fragmentation, increased electricity costs, and land-use conflicts.

Comment(s)

SI5 **Sierra Club (cont.)**

Earlier this year, the U.S. Geological Survey in cooperation with the BLM, released "Summary of Science, Activities, Programs, and Policies the Influence the Rangewide Conservation of Greater Sage-Grouse (Centrocercus urophasianus): Open-File Report 2013-1098" [44].

SI5r Recent range-wide breeding density analysis performed for the BLM stresses the importance of specific areas to sage-grouse, and thus conservation prioritization. *Specific portions of GWS routes fall within areas that contain the top 25 percent of the breeding population within Management Zones II (WY, CO, UT) and III (UT)*[45].

SI5s The USFWS 2010 Findings state, "Southwestern and central Wyoming and northwestern Colorado in MZ II has been considered a stronghold for sage-grouse with some of the highest estimated densities of males anywhere in the remaining range of the species (Connelly *et al.* 2004, pp. 6-62, A5-23). Wisdom *et al.* (in press, p. 23) identified this high-density sagebrush area as one of the highest priorities for conservation consideration as it comprises one of two remaining areas of contiguous range essential for the long-term persistence of the species" (page 35) [46].

Therefore, we are concerned that the GWS transmission line *will cause significant adverse impacts to Greater Sage-Grouse.* Priority habitats should be identified and protected with adequate stipulations. Leks, nearby nesting and brood-rearing habitats, and winter habitat should be avoided. Locations for appropriate mitigation should be identified using best available spatial tools, and monitoring must be enforced to determine effectiveness, yet these measures are not adequately identified or analyzed in the DEIS.

1 THE DEIS FAILED TO ADEQUATELY IDENTIFY AND ANALYZE GREATER SAGE-GROUSE HABITAT

Commenced in 2011, BLM's comprehensive National Planning Strategy focuses on developing and implementing Greater Sage-Grouse conservation policies across the bird's range as one of the highest level species recovery efforts in the history of the western United States. The BLM's emphasis for protecting and managing sage-grouse habitat incorporates the following principles:

1) Protection of unfragmented habitats;
2) Minimization of habitat loss and fragmentation; and
3) Management of habitats to maintain, enhance, or restore conditions that meet Greater

---

[44] Manier, D.J., Wood, D.J.A., Bowen, Z.H., Donovan, R.M., Holloran, M.J., Juliusson, L.M., Mayne, K.S., Oyler-McCance, S.J., Quamen, F.R., Saher, D.J., and Titolo, A.J., 2013, Summary of science, activities, programs, and policies that influence the rangewide conservation of Greater Sage-Grouse (*Centrocercus urophasianus*): U.S. Geological Survey Open-File Report 2013–1098, 170 p., http://pubs.usgs.gov/of/2013/1098/

[45] Doherty K.E., J.D. Tack, J.S. Evans, and D.E. Naugle. 2010. Breeding densities of greater sage-grouse: A tool for range-wide conservation planning. BLM Completion Report: Interagency Agreement # L10PG00911. http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs.Par.46599.File.tmp/GRSG%20Rangewide%20Breeding%20Density.pdf

[46] US Fish and Wildlife Service 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. 2010. 50 CFR Part 17, FWS-R6-ES-2010-0018, MO 92210-0-0008-B2]. http://www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf

Response(s)

SI5r The BLM acknowledges the importance of considering breeding density of sage-grouse when siting transmission lines. The BLM conducted an analysis of the breeding density of sage-grouse at leks within 4 miles of the proposed alternative routes and route variations. This analysis is presented in Section 3.2.8.5.4 of the EIS.

The BLM conducted the analysis of potential effects on sage-grouse using the best available information, including information regarding the location of priority habitats. The analysis has been revised to incorporate additional information regarding winter and brood-rearing habitats, where available. Under all alternative routes and route variations, design features and site-specific selective mitigation measures would be used to reduce the effects of the Project on sage-grouse. These measures are described in Section 3.2.8.4.3 and Table 3-102 of the Final EIS.

As described in Section 3.2.8.4.3, preconstruction surveys would be conducted to refine the application of selective mitigation measures and to establish monitoring requirements, which would be included in the POD.

SI5s See response to comments SI5r.

Recommendation noted. BLM acknowledges the potential adverse impacts on biological resources along this segment. For this reason, this segment is not included as part of the Agency Preferred Alternative.

Under any of the alternative routes and route variations, the Applicant would develop a voluntary sage-grouse conservation and mitigation plan in coordination with the agencies for the Agency Preferred Alternative (refer to Appendix K). The mitigation plan will offer measures to avoid, minimize, or compensate for all Project effects characterized by the framework and identified in the EIS that could not be mitigated or avoided using measures in BLM or other agency plans, including losses of habitat services quantified using the HEA.

Comment(s)

SI5 **Sierra Club (cont.)**

Sage-Grouse life history needs.

A December 2011 meeting of top federal and state stakeholders on sage-grouse, including Wyoming Governor Matt Mead and Department of Interior Secretary Ken Salazar, resulted in the formation of a "Sage-Grouse Task Force (Task Force) chaired by Governors Mead (WY) and

SI5t

Hickenlooper (CO) and the Director of the BLM." The Task Force tasked USFWS "with the development of conservation objectives for the sage-grouse." The result is the Sage-Grouse Conservation Objectives Team Draft Report (COT Report)[47], published in February 2013, which also supports protecting key habitats through "an avoidance first strategy" to retain management options:

> In light of these significant uncertainties, impacts to sage-grouse and their habitats should be avoided to the maximum extent possible to retain conservation options. This approach will ensure that potentially unidentified key components to long-term viability of sage-grouse are not lost, and that management flexibility and the ability to implement management changes will be retained as current information gaps are filled. *Implementing an avoidance first strategy should reduce or avoid continuing declines of sage-grouse populations and habitats, as well as limit further reduction in management and restoration options*. (USFWS 2013 at 31, emphasis added)

The best way to protect the most valuable and essential remaining habitat and to advance recovery goals is to provide assured protections to the most important remaining sage-grouse habitat. *These lands should be identified and protected with prioritization afforded to 1) core/priority habitats lands, 2) adjacent or stand-alone habitats where large intact blocks remain, (including those in non-core habitat), and 3) the special habitat types which may be limited within a given area (breeding, nesting, brood-rearing, winter, and connectivity habitats).*

SI5u

However, *the DEIS has little or no discussion of actual habitat and population conditions and trends in the Core/Priority/PPH Habitats identified as overlapped by the project area* which we know is available in Wyoming and which may be available elsewhere. BLM should incorporate and analyze additional site-specific information for each individual core area, based on a search of existing state data and scientific research. The discussion should include (1) a quantitative discussion of the most recent survey data regarding leks and bird numbers, (2) a qualitative discussion of the resource values and current condition of these priority habitats, including trends, threats, and direct, indirect and cumulative impacts, and (3) other issues and special resource values in the priority habitats relevant to the impacts of construction and operation of this high voltage transmission line - including migration corridors, connectivity, breeding density, special habitat types such as brood-rearing or winter habitat, and existing disturbance levels and percentage. These analyses must reflect the best current scientific information, and the

---

[47] U.S. Fish and Wildlife Service. 2013. Greater Sage-grouse (*Centrocercus urophasianus*)

Conservation Objectives: Final Report. U.S. Fish and Wildlife Service, Denver, CO. February

2013.http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/COT/COT-Report-with-Dear-Interested-Reader-Letter.pdf

Response(s)

SI5t

See response to comments SI5r and SI5s.

SI5u

The methods used to identify and analyze potential effects on greater sage-grouse meet BLM and cooperating agency requirements for sage-grouse impact analysis and are consistent with the Framework for Sage-grouse Impacts Analysis for the Project (Final EIS, Appendix K). Impacts on sage-grouse were evaluated for (1) core areas or priority habitat, (2) general habitat and transmission line corridors designated in Wyoming Executive Order 2011-5, (3) habitat within 4 miles of leks in core areas or priority habitat, (4) habitat within 4 miles of leks outside core areas or priority habitat, (5) the numbers of sage-grouse leks within 2, 4, and 11 miles of each alternative route and route variation, and (6) the percentage of each state's estimated sage-grouse population that attend leks located within 4 miles of each alternative route and route variation. The same methods used to conduct these analyses on a statewide basis were used to analyze impacts on sage-grouse and sage-grouse habitat in the seven geographically separate sage-grouse populations crossed by the alternative routes and route variations in Utah. Sage-grouse habitat in northwestern Colorado and south-central Wyoming is contiguous and distinct population boundaries are not recognized by the BLM or state wildlife agencies. Therefore, additional individual population-level analyses beyond the statewide analyses described previously were not warranted in Colorado and Wyoming.

Descriptions and maps of population areas in each state are provided in Section 3.2.8.5.4 and include numbers of known occupied leks, population trends, and existing direct and indirect impacts on populations and habitats.

Comment(s)

SI5 **Sierra Club (cont.)**

SI5u fact that all core areas may not be "created equal" with regard to habitat quality and importance to conservation and recovery efforts.

SI5v Winter habitat, including concentration areas, were referenced in the Trans West Express DEIS (3.8-14): "In years with severe winter conditions (i.e., deep snow), greater sage-grouse often gather in large flocks in areas with the highest quality winter habitat. It is suggested that high quality winter habitat is limited in portions of the greater sage-grouse's range (Connelly et al. 2000). Wintering habitat for greater sage-grouse has been defined for populations in Colorado and Utah, and is currently being defined for populations in Wyoming (WGFD 2012)" and (DEIS 3.8-60) "Marking would be prioritized in areas near leks, in winter concentration areas …" Winter habitat is poorly addressed in the GWS DEIS.

SI5w An additional issue is that the DEIS presents sage-grouse impacts by alternative route rather than segments (see Table 3-104 as example). This level of information aggregates impacts at too coarse a spatial scale to allow reviewers to understand and evaluate the level of impact across the individual segments. It is unrealistic to expect that one of the alternatives in its entirety, from the DEIS will ultimately be selected for the transmission route. Given this, the manner in which wildlife impacts are presented in the DEIS minimizes the ability of reviewers to provide feedback or guidance on unique routing combinations.

2. THE DEIS FAILED TO IDENTIFY MEANINGFUL PROTECTIONS FOR GREATER SAGE-GROUSE

The DEIS proposes implementation of various measures to identify sensitive areas to Greater Sage-Grouse (e.g. leks, nesting habitat, wintering habitat, etc.) and implement seasonal timing restrictions and protection buffers in accordance with various Instructional Memorandums, Executive Orders, and existing Resource Management Plans (RMPs). Adherence to these regulations and guidelines is being presumed to reduce impacts to sage-grouse. However, there are fundamental flaws with this rational and challenges for stakeholders to have assurances of meaningful protection for Greater Sage-Grouse. Specifically, (1) these RMPs are often dated and founded on inaccurate/inadequate protections, (2) field offices present an inconsistently wide range of protective measures, (3) these protections are primarily limited to construction only, (4) not all aspects of sage-grouse biology or habitat needs are adequately addressed, (5) monitoring and enforcement are poorly addressed, (6) off-site mitigation is inadequately considered, and (7) areas serving as refugia, such as unfragmented landscapes, are not identified for stronger protections. Some of these concerns are addressed in further detail below.

Surface disturbance will have adverse impacts to sagebrush habitats including temporary and permanent loss of habitats across all alternatives, and fragmentation and degradation of habitat for sage-grouse will result. Therefore, protective stipulations within the project area must receive careful attention.

SI5x The DEIS relies heavily on BLM field office stipulations (Table E-11), which highlights *the inconsistent and inadequate wildlife protections across the field office planning areas*. In addition, the protections afforded to sage-grouse are predominantly founded in inaccurate and inadequate protections. Science strongly argues that the *spatial restrictions (no surface use and*

Response(s)

SI5v The analysis in the Final EIS has been revised to incorporate additional information regarding winter habitats, where available. Under all alternative routes and route variations, design features and site-specific selective mitigation measures would be used to reduce the effects of the Project on sage-grouse. These measures are described in Section 3.2.8.4.3 and Table 3-102 of the Final EIS.

SI5w Section 2.5.1.3 and Figure 2-7 for the Final EIS presents the systematic and progressive analysis for screening and comparing local areas (Level 1 analysis) then subregional areas (Level 2 analysis) that was conducted to narrow the number of alternative routes and route variations and determine the most environmentally acceptable alternative routes and route variations to be addressed in the EIS. That is, for each level, once the impacts along each of the areas (local/sublocal/regional) of alternative routes and route variations had been analyzed, the areas of alternative routes were screened and compared to identify which were most environmentally preferable and to eliminate from further consideration less preferable ones (in accordance with criteria at 40 CFR 1502.14). The Level 1 and 2 analysis results are recorded in the Project record. Routes considered and eliminated from detailed analysis through the Level 1 and Level 2 screening and analysis are described in Section 2.6.2 in the EIS. The Level 3 analysis involved combining the suitable segments of routes from the first two levels of screening to form complete routes. The Level 3 analysis is presented in the EIS. The commenter is referred to Tables S-1a through S-1d in the EIS that provide a detailed comparative analysis (Level 3) of the resources for each alternative route and route variation considered in detail in the EIS. The tables identify key resource inventories and associated impacts for each resource based on the analysis presented in Chapter 3. Further, the commenter is referred to the Map Volume (Volume II) that accompanies the EIS. The map volume contains one map showing the seven construction access levels that predict (1) the general type of access required for each mile of alternative route and (2) the associated disturbance and 23 maps showing resource inventory and impacts. The inventory and impacts are reported by link. Finally, because of this systematic and progressive analysis, the Agency Preferred Alternative identified for the northern Project area (from Aeolus Substation, Wyoming, to near U.S. Highway 40 at the Colorado-Utah border) and southern Project Area (from the Colorado-Utah border to the Clover Substation, Utah) in the EIS does indeed reflect the agencies' preference for consideration by the agency decision-makers when selecting and approving a route.

	Comment(s)	Response(s)
SI5	**Sierra Club (cont.)**	
SI5x	*controlled surface use restrictions) proposed in the DEIS are severely inadequate*. The 0.25 mile and 0.60 restrictions around the perimeter of occupied leks, as noted in Table E-11, have long been recognized as being without scientific merit and an inadequate protective measure to maintain lek activity (Holloran 2005, Walker et al. 2007). Instead, given the research from oil and gas development, the agency should *avoid placing transmission lines within 5 miles of sage-grouse leks, which is also recommended by the USFW* [48]. The Lander RMP DEIS and FEIS both recognized this, as did the Miles City RMP. As noted in the latter, "BLM NSO stipulations for leasing and development within 0.25 miles of a lek would result in an estimated lek persistence (the ability of leks to remain on the landscape) of approximately 5 percent, while lek persistence in areas without oil and gas development would be expected to average approximately 85 percent. Impacts from energy development occur at distances between 3 and 4 miles." …. "Impacts to leks caused by energy development would be most severe near the lek. Although most of the impacts from energy development are indirect, some direct effects, such as flying into overhead power lines would also result from energy development and ROWs." Miles City DEIS/RMP at 4-135.	The EIS was developed using the best available information regarding the potential effects of transmission lines on sage-grouse and acknowledges the potential negative effects of siting a transmission line near leks. The analysis has been expanded in the Final EIS to include recently published literature regarding recommended distances between active leks and potentially disruptive land uses, such as transmission lines. The BLM's decision on the Project would comply with all applicable sage-grouse stipulations in BLM RMPs, including any required lek avoidance distances. As described in Appendix K, Section K.3.1, the BLM and the Applicant collaborated to develop strategies to avoid, minimize, and compensate for the potential effects of the Project pursuant to the applicable plans and policies. These strategies include removal of alternative routes from consideration that would have the greatest effects on sage-grouse and modification of alternative routes carried forward to reduce impacts on sage-grouse (e.g., increasing the distance between the Project and active leks). Despite the actions taken to avoid and minimize impacts on sage-grouse, sage-grouse habitat is widespread in the Project area and all alternative routes would cross sage-grouse habitat. The EIS acknowledges that despite application of design features of the Proposed Action and selective mitigation measures to reduce the effects of the Project on sage-grouse and sage-grouse habitats, impacts on sage-grouse are still anticipated to occur. The Applicant is preparing a voluntary Sage-grouse Conservation and Mitigation Plan, which has included preparation of an HEA. The Sage-grouse Conservation and Mitigation Plan would outline actions that would be taken to offset unavoidable effects on sage-grouse.
SI5y	Furthermore, the timing restrictions in the DEIS are also widely varying and could well pose a serious threat to nesting hens or those with foraging young. While there should be flexibility to incorporate local characteristics to fine-tune the window of protection there should be a relatively consistent window of protections afforded to nesting and early brood rearing habitat. Therefore, we strongly suggest that protections be extended until at least July 15 to be meaningful and maintain healthy future populations.	The Project must comply with the plan requirements of each field office and any relevant conservation plans or agreements. Different field offices have different landscapes, resources, and resource uses; thus different resource management needs. Thus, some management prescriptions, such as the timing restrictions, differ between plans. The Applicant will be engaged in on-going coordination with the agencies during project development and may extend timing restrictions in site-specific areas based on agency recommendations.
SI5z	Our review of the DEIS identified Selective Mitigation Measures #6 and #14 that attempt to limit impacts by avian predation through tubular tower designs and anti-perching devices, respectively, as the only mitigation measure focused on reducing impacts to sage-grouse during the operation phase of the proposed Project (DEIS pages 3-444 and 3-445). The remaining *protective stipulations apply primarily to the development-specific time-frame. Instead, we urge that protections be extended into the operations and maintenance periods*. Lander RMP FEIS notes that "wildlife seasonal protections from surface-disturbing and disruptive activities apply to maintenance and operations actions when the activity is determined to be detrimental to wildlife." FEIS at 117. This is important timing due to the length of time associated with maintenance and operations actions, beyond the usual development-specific stipulations. BLM supported this in the Lander RMP FEIS: "Beyond initial exploration (including geophysical activities), land clearing, and aboveground facility construction, continued human disturbance to special status wildlife could occur from activities such as equipment maintenance and site	Protections to sage-grouse are extended to the operations and maintenance periods as part of the Projects' design features of the Proposed Action (Table 2-8). Design features specific to sage-grouse are listed in Table 3-102 and include: alteration of placement of roads or towers (Design Feature 3), construction to avian-safe design standards (Design Feature 4), seasonal restrictions (Design Feature 6), vehicle access restriction (Design Feature 26), construction activity access restriction (Design Feature 27), personnel instruction (Design Feature 28), hazardous material restrictions (Design Feature 30), and vehicle speed limit for overland travel (Design Feature 39).

---

[48] Prairie grouse leks and wind turbines: U.S. Fish and Wildlife Service justification for a 5-mile buffer from leks; additional grassland songbird recommendations. Manville, A.M., II (2004). Division of Migratory Bird Management, USFWS, Arlington, VA, peer-reviewed briefing paper. http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/prairie%20grouse%20lek%205%20mile%20public.pdf

Comment(s)

SI5 **Sierra Club (cont.)**

SI5z operations, which are especially disruptive during sensitive times (wintering, breeding, and nesting).” FEIS at 931. The Miles City Draft RMP noted that in areas where development occurred, “there would be no restrictions to operation and maintenance activities, *which would potentially result in the reduction or extirpation of populations*.” DEIS at 4-134 (emphasis added).

SI5aa The current protections proposed for adoption includes No Surface Occupancy (NSO) stipulations as a means of protection for grouse. However, *NSOs are subject to exceptions, waivers and modifications*. Since exceptions, etc. can be applied to NSOs, this *fails to meet the regulatory certainty being sought by USFWS*, which is of grave concern given the importance of this habitat to sage-grouse persistence in the planning area.

3. THE DEIS FAILED TO ADEQUATELY IDENTIFY AND ANALYZE NOISE IMPACTS

SI5ab The GWS DEIS fails to adequately address *noise* impacts. While the DEIS states that Executive Order protections are to be incorporated, it is unclear if this is only for Wyoming or across the entire route. New research should be considered, from Wyoming's Sage-Grouse Implementation Team (currently investigating noise impacts) and other research sources. Facilities that produce continual noise can affect the breeding vocalizations of greater sage-grouse. Continuous noise from industrial facilities, such high voltage transmission lines and substations, close to active sage-grouse leks would interfere with male greater sage-grouse strutting behavior which could reduce the reproductive success of sage-grouse using these leks. The BLM does note in the Gateway West FEIS, “construction-related noise and dust disturbance would occur during construction, which could potentially make habitat within the immediate vicinity of the activity temporally unsuitable for this species.” FEIS at 3.11-65. We strongly recommend that *BLM carefully review and incorporate new research* which relates to noise impacts on grouse, as these are suggesting threats to sage-grouse population viability – through abundance, stress levels, and behavior [49].

SI5ac *The DEIS fails to identify (through mapping) and analyze the spatial distribution and acreage of current winter habitat for sage-grouse and its current quality.* This is a serious omission, as this will likely drive selection of appropriate protective measures and prioritize restoration activities.

V. THE DEIS OMITTED IDENTIFICATION OF AND COMMITMENT TO SPECIFIC MITIGATION MEASURES

---

[49] Blickley, J.L., D. Blackwood, and G.L. Patricelli. 2012. Experimental evidence for the effects of chronic anthropogenic noise on abundance of greater sage-grouse at leks. Conservation Biology 26(3):461-471.

Blickley, J.L. and G.L. Patricelli. 2012. Chapter 3: potential acoustic masking of greater sage-grouse (Centrocercus urophasianus) display compnents by chronic industrial noise. Ornithological Monographs 74: 23-35.

Response(s)

SI5aa The BLM has clearly indicated the agency’s consideration of granting waivers, exemptions, and modifications to various stipulations in BLM RMPs in the EIS. BLM NEPA regulations do not require the BLM to allow public comment on subsequent consideration of individual waivers, exemptions, and modifications.

SI5ab Noise impacts on sage-grouse are addressed in Section 3.2.8.4.3.

Noise was identified as a direct and indirect effect in the construction and operation phases of the Project in Tables 3-98 and 3-99. Also, in Table 3-100, noise is identified as a potential direct effect of the Project that would contribute to (1) the present or threatened destruction, modification, or curtailment of sage-grouse habitat or range; and (2) disease and predation. These effects are described in more detail in the sections titled Disturbance to Sage-grouse and Disruption of Breeding Activities due to Increased Human Presence and Noise at Lek Locations; Disturbance to Sage-grouse During Nesting, Breeding, and Wintering Periods Resulting from Human Presence, Vehicle Use, and Noise During Construction and Maintenance; Disease and Predation; Disruption of Sage-grouse Nesting and Breeding Activities; and Sage-grouse Avoidance of Habitat Due to Human Presence Resulting from Pubic Use of New Access Routes.

Wyoming Executive Order 2011-5 outlines the management of greater sage-grouse in the state of Wyoming. The regulatory framework pertinent to sage-grouse in Colorado and Utah is provided in Section 3.2.8.1.1.

SI5ac The BLM conducted the analysis of potential effects on sage-grouse using the best available information, including information regarding the location of priority habitats. The analysis has been revised to incorporate additional information regarding winter and brood-rearing habitats, where available. Information from the referenced report was incorporated as appropriate, though BLM is not responsible for identifying and mapping sage-grouse habitats.

Comment(s)

SI5

Sierra Club (cont.)

Mitigation is an important requirement of NEPA. In fact, in Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989) the court stated that: "*Omission of a reasonably complete discussion of possible mitigation measures*" undermines NEPA and the ability to assess the severity of environmental impacts. Following BLM's Special Status Species Policy and its ESA Section 7(a)(1) affirmative obligations to conserve and recover listed species, as well as the BLM's requirements to manage for the full range of resources and values on public lands, the FEIS should detail how specific impacts from GWS will be mitigated through required, specific off-site mitigation actions. It is unacceptable to defer identification of and commitment to specific off-site mitigation measures until after the FEIS is published. Without this information, the public cannot fully and fairly analyze the impacts of the proposed GWS project. SI5ad

SI5ae Before a rigorous discussion of mitigation can take place, however, the complete extent of the potential impacts must be carefully assessed. This assessment must include for each endangered and threatened species – and should include for all candidate species – science-based estimates of the direct, indirect, and cumulative impacts throughout the length of the proposed line, and how the cumulative impact of the entire line adds to the other ongoing and reasonably foreseeable impacts throughout the ranges of the targeted species.

SI5af Ecosystem-level planning and strategies should be employed in addition to species-specific analyses. An assessment tool or evaluation strategy approved by USFWS should be used to quantify the interim and permanent impacts (injury) to habitats (direct, indirect, and cumulative as outlined above) and the ecological services provided by those habitats. This will enable a more accurate and predictive approach to mitigating impacts across the entire line.

SI5ag BLM should implement a "no net loss" or a "net gain" requirement for resources and values, with the goal of achieving a "net conservation benefit" for special status resources and species, including BLM Special Status Species. BLM should ensure that any loss of resources or values associated with the GWS project is compensated with the addition and protection of equivalent or better resources and values offsite. BLM should also make a determination about the value of the habitat to be impacted and establish mitigation requirements for the specific habitat types impacted.

A. THE DEIS FAILED TO DISCLOSE HOW MITIGATION WILL BE CONSISTENT WITH LANDSCAPE LEVEL MITIGATION STRATEGIES

In October 2013, Interior Secretary Sally Jewell issued *Order No. 3330* to establish a Department-wide mitigation strategy that focuses on mitigation opportunities at the landscape level. President Obama also recently issued a Presidential Memorandum on improving siting, permitting and mitigation for transmission development.[50] Both of these documents offer

---

[50] *Available at:* http://www.whitehouse.gov/the-press-office/2013/06/07/presidential-memorandum-transforming-our-nations-electric-grid-through-i

Response(s)

SI5ad See response to Comment SI5k.

As described in Section 2.5.1.2 of the EIS, after initial impacts were identified for each resource, measures to mitigate impacts for environmental protection (refer to Table 2-13) were applied to avoid, reduce, or minimize moderate or high impacts. This information is recorded for every alternative route and route variation considered in the EIS. Once an alternative route or route variation is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. For example, if a road closure was recommended, the Applicant would work with the applicable land-management agency or landowner to determine the specific method of road closure most appropriate for the site or area (e.g., barricading with a locking gate, obstructing access on the road using an earthen berm or boulders, revegetating the roadbed, or obliterating the road and returning it to its natural contour and vegetation). This detailed mitigation would be incorporated into the POD prior to Project construction. In other words, the selective mitigation measures applied during impact analysis and mitigation planning will be carried forward from the EIS, and refined by resource surveys conducted for the selected route. Where substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation) and developed in coordination with cooperating agencies for the selected route.

Also, when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.

SI5ae The EIS analysis uses a systematic approach to analyze the impacts of each alternative route and route variation on direct, indirect, and cumulative impacts on wildlife and their habitats in Sections 3.2.7, 3.2.8, 4.3.7, and 4.3.8. The analysis methods were developed through coordination and in cooperation with BLM, USFS, and FWS resource specialists and state wildlife agencies.

Also see response to Comment SI5ad.

SI5af See next page for response to SI5af.

SI5ag See next page for response to SI5ag.

Comment(s)

Response(s) - continued

SI5 **Sierra Club (cont.)**

SI5af Thank you for your suggestion. The BLM believes the level of analysis included in the EIS is adequate for the scope of the Project. Please note that wildlife impacts are analyzed and discussed at the habitat-level. Also, the cumulative impact analysis assesses different resources at a different geographical (and temporal) extent, based on what is deemed appropriate for the resource. The methodology for all biological resources was developed and approved in coordination with the cooperating agencies assisting the BLM in preparation of the EIS, including the FWS.

SI5ag As a multiple-use agency, BLM does not require projects to achieve a net conservation benefit. However, loss of resources or values does require mitigation. In general, the need for additional public land to be designated for conservation management could be considered in future RMP revisions, but is not appropriate for a project-level evaluation. No additional special management areas are proposed as part of this Project, and as such, development of management plans for special designation areas is beyond the scope of this project.

Comment(s)

SI5 **Sierra Club (cont.)**

valuable tools for continuing to improve the conservation outcomes for mitigation for project

SI5ah impacts, and should be used to improve mitigation for GWS in the FEIS. BLM should follow *Secretarial Order 3330 (Improving Mitigation Policies and Practices of the Department of the Interior)* and employ landscape-level mitigation to mitigate the detrimental effects the transmission line will have upon wildlife and lands with wilderness character. This landscape-level mitigation and all compensatory mitigation should be identified *prior* to project approval. BLM must demonstrate how the approaches used for GWS are consistent with the BLM Draft Regional Mitigation Manual, Secretarial Order No. 3330 (see Section IV), and the Presidential Memorandum

B.THE DEIS FAILED TO COMMIT TO OR EVEN ANALYZE OFF-SITE MITIGATION

While avoidance and minimization are critical first and second steps in the hierarchy, off-site,

SI5ai compensatory mitigation for unavoidable impacts is also necessary. Unfortunately, the DEIS is wholly inadequate in terms of off-site mitigation. In fact, as far as we can tell, the DEIS does not commit to or analyze any specific off-site mitigation for GWS but simply lists examples in Appendix K. Appendix K states that “when applying mitigation at any level of the mitigation hierarchy, there would be requirements for monitoring the effectiveness of the mitigation as well as the durability of the mitigation. This monitoring is necessary, especially in relation to durability for compensatory mitigation to identify when it may be appropriate to consider applying adaptive management concepts to ensure continued durability for the life of the Project.” Clarification is needed as to what the mitigation is, who would be responsible for this monitoring, and how it would be structured. This information should be publically available.

The lack of details regarding off-site mitigation in the DEIS make it impossible to fully and fairly evaluate the impacts of the proposed GWS project. *It is unacceptable to wait until after the ROD is signed to identify and require specific off-site mitigation measures.*

SI5aj In particular, *identification of appropriate sites for off-site mitigation for Greater Sage-Grouse is critical*. Research on sage-grouse has generated an unprecedented amount of data in recent years, which should be the basis for *identifying and prioritizing potential mitigation locations*. A comprehensive spatial analysis must be completed to determine either those areas where a critical habitat component is missing or those areas that support large populations of sage-grouse and are at high risk for wildfire, invasion of cheatgrass, or other threats. In 2010, Doherty et al. developed a scientifically valid range-wide conservation planning tool based on density of males on leks. This has been subsequently recognized as a valuable tool by USFWS, BLM, and state agencies. States have also begun to prioritize sage-grouse habitat. In 2012, the Nevada Department of Wildlife published its sage-grouse habitat categorization analysis, which delineated five classes of sage-grouse habitat ranging from essential/irreplaceable habitat to unsuitable habitat, and which can be used to direct mitigation and conservation efforts within Nevada. We refer the BLM to the USGS Summary Report[3], specifically Section IV (Factor D: Policies and Programs Affecting Sage-Grouse Conservation) for a more detailed review of existing state programs that could assist in identifying and prioritizing mitigation opportunities.

C. DEIS DID NOT INCLUDE AN AVIAN PROTECTION PLAN

Response(s)

SI5ah See response to Comment SI5ad.

SI5ai See resonse to Cmment SI5ad.

SI5aj See response to Comment SI5ai.

Comment(s)

SI5 **Sierra Club (cont.)**

SI5ak The DEIS referenced an Avian Protection Plan (APP) only once, Table 2-8, dated 2011. As with proponents of other high-voltage transmission lines, the proponent should be committed to developing an operational policy and a comprehensive strategy for collecting data, minimizing impacts, and mitigating loss of migratory birds and essential habitats prior to the initiation of construction. This policy and strategy should be incorporated into a single, over-arching, living document (the APP) that will include a full listing of all minimization measures included in this analysis, as well as recommendations from the USFWS and additional information included within the APP Guidelines, developed by the USFWS and APLIC in 2005 (APLIC 2012). The APP should describe how the transmission tower design will reduce electrocution risks, prevent nesting, and prevent collisions with electrical wires and tower support wires. The GWS APP, given its 2005 date, must be updated, which would enable adding line-specific risk assessments for nesting on structures along the chosen ROW and collision risk assessments. The APP should be continually evaluated and refined as monitoring data and new innovations, as well as ongoing information on avian impacts, become available. Given the breadth of avian impacts anticipated to occur with this line, including to sensitive species, *the APP must be made available for public review and comment prior to the release of the FEIS.* Ongoing impacts to avian species during construction and operation of the line must be provided to the public in a transparent manner, with members of the public given opportunities to participate in the ongoing development of the APP.

CONCLUSION

Thank you for the opportunity to provide comments on the BLM's draft DEIS for the proposed Gateway South project. We recommend that the BLM incorporate PacifiCorp's most recent load forecasts and examine in depth non-transmission alternatives that could in total defer and/or obviate the need for this project. We also recommend the BLM properly analyze impacts to Greater Sage-Grouse and identify and commit to specific mitigation measures.

Sincerely,

Sarah K. Friedman

Sarah K. Friedman
Senior Campaign Representative
Beyond Coal Campaign
Sierra Club
Los Angeles, CA

Attachment A --Synapse Energy Economics Report on the DEIS

Response(s)

SI5ak APPs are utility-specific documents that delineate a program designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities. The Applicant for the Project is an existing, regulated public utility with an existing programmatic APP that would apply to the Project, if built. Programmatic APPs can be developed to establish utility-wide practices and are not intended to be developed for individual projects. The Applicant's APP is included in the Administrative Record and includes monitoring, reporting, and best management practices to reduce avian mortality.

Location-specific avian protection measures will be developed in collaboration with the agencies and be compatible with the Applicant's existing APP.

SI5 **Sierra Club (cont.)**

Synapse
Energy Economics, Inc.

May 20, 2014

Gloria Smith
Managing Attorney - Sierra Club
85 Second Street
San Francisco, CA 94105

RE: Comments Regarding Bureau of Land Management Gateway South Draft Environmental Impact Statement

Dear Ms. Smith:

As requested by Sierra Club, Synapse Energy Economics is pleased to provide the following comments on the Bureau of Land Management's (BLM) Draft Environmental Impact Statement (DEIS) for the proposed Gateway South Transmission project.[1] Our comments address the following issues:

- The purpose and need sections of the DEIS did not adequately demonstrate the need for the proposed transmission project
- The DEIS did not adequately explore non-transmission alternatives
- The DEIS did not adequately explore the long-term impacts associated with the proposed transmission project
- The BLM should incorporate additional information into the Final Environmental Impact Statement to address how market development changes will influence utilization of the proposed transmission line

BACKGROUND

The Gateway South project is a proposed 500 kV AC transmission line that will start at the Aeolus substation in Carbon County, Wyoming and end at the Mona substation in Juab County, Utah. Depending on the route, this 400-500 mile transmission line will serve as the southern leg of the Gateway transmission projects originally proposed by PacifiCorp in 2007. Because the proposed project will require right of ways across BLM properties, BLM is required to file an environmental impact statement under the National Environmental Policy Act (NEPA).

---

[1] DEIS available at http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html

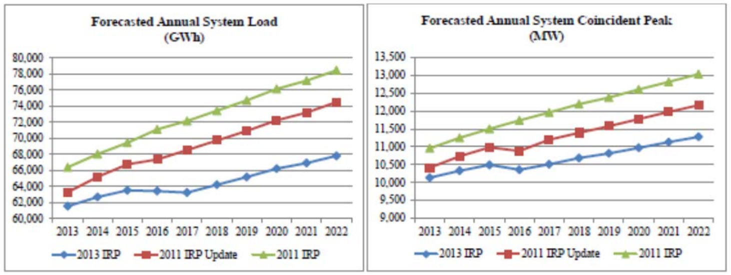
The purpose and need sections of the DEIS did not adequately demonstrate the need for the proposed Transmission project

NEPA “emphasizes the importance of coherent and comprehensive upfront environmental analysis to ensure informed decision-making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.” Here the BLM has circulated a DEIS based on outdated information that calls into question whether the proposed project is needed at all. In addition, the DEIS provided an inadequate range of project alternatives and failed to properly consider the proposed project’s impacts on climate change.

BLM must update the DEIS to reflect the most recent PacifiCorp Integrated Resource Plan.

The 2014 DEIS cites important data from PacifiCorp’s 2011 Integrated Resource Plan (IRP),[2] even though the DEIS directly referenced PacifiCorp’s 2013 IRP.[3] The 2011 IRP is nearly three years older than the draft DEIS. The use of old data compromises the DEIS’s analysis because the 2013 IRP PacifiCorp lowered many of the growth forecasts cited in the DEIS. The following figures taken from the 2013 PacifiCorp IRP Update, dated April 2013, show how the load forecast from the 2011 IRP (green line with triangles) are much higher than the 2013 IRP (blue line with diamonds).

Figure 1: Figure ES.1 from PacifiCorp 2013 IRP



The difference in Forecasted Annual System Coincident Peak in 2023 is approximately 1,800 MW (13,000 MW - 11,200 MW = 1,800 MW). This is significant because the Gateway South Project is projected to carry 1,500 MW of capacity, and the difference between the load forecast vintages exceeds the carrying capacity of the proposed line.[4] PacifiCorp's updated data calls into question the actual need for the proposed project. In order to comply with NEPA, BLM must revise the EIS to reflect the most recent information on growth forecasts.

---

[2] US Department of Interior Bureau of Land Management. Draft Environmental Impact Statement and Land-use Plan Amendments for the Energy Gateway South Transmission Project. BLM/WY/PL-14/009+5101, Case File: WYW-174597. Volume1-A. February 2014.

[3] PacifiCorp. 2013 PacifiCorp Integrated Resource Plan Volume 1. March 30, 2013. Available at http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/PacifiCorp-2013IRP_Vol1-Main_4-30-13.pdf.

The DEIS's description of PacifiCorp's energy usage growth and resource needs is stale information and must be updated. According to the DEIS, energy usage growth will be 2.3 percent per year for the next five years and 2 percent each year over the next ten years.[5] This information is based on the 2011 IRP and does not reflect the Company's current forecast.[6,7] The 2013 IRP projects a peak load growth compound annual growth rate of 1.2 percent from 2013-2022. Energy growth in the 2013 IRP is at an annual average growth rate of 1.08 percent for 2013-2022, well below the 2 percent noted in the DEIS.[8] The annual average growth rate for the five years (2013-2017) is 0.68 percent, well below the 2.3 percent for the next five years cited in the DEIS. BLM's energy growth rates for PacifiCorp should be updated to be consistent with PacifiCorp 2013 IRP values.

THE DEIS'S DESCRIPTION OF PACIFICORP'S RESOURCE NEEDS DID NOT REFLECT UPDATED INFORMATION AND, TO BE ACCURATE, MUST BE UPDATED.

According to the DEIS, PacifiCorp currently has 12,500 MW of existing resources and projects that it will need 15,000 MW of resources (including a 13 percent reserve margin) by 2023.[9] The DEIS summarized this information as a graphic in Figure 4 of Appendix A, which is shown below.[10]

---

[4] BLM. (2014). Page S-3.

[5] BLM. (2014). Page S-3.

[6] PacifiCorp. 2011 Integrated Resource Plan Volume 2. March 31, 2011. Table A.9. Page 11.

[7] Table A.9 indicates that the 2011-2020 average annual growth rate is 2.1 percent. The average annual growth rate for the five years 2011-2015 is 2.4 percent. These values are slightly different that the growth rates reported in the DEIS.

[8] PacifiCorp. 2013. Appendix A. Page 30.

[9] BLM. (2014). Page S-3.

[10] BLM. (2014). Page A-8

Figure 2: PacifiCorp Existing Resources and Future Needs from Figure 4, Appendix A

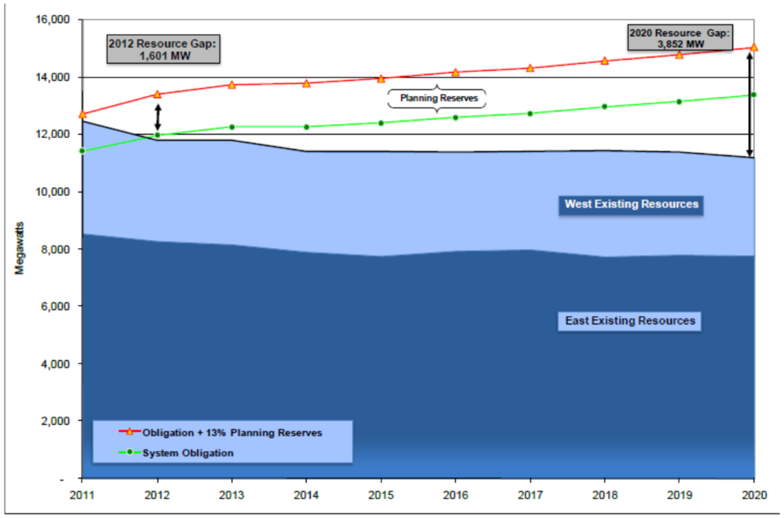


Figure 4 is taken from Figure ES.2 System Capacity Resource Gap from the PacifiCorp 2011 IRP.[11] The figure projects that PacifiCorp will have a resource gap of 3,852 MW by 2020.[12] Inconsistent with NEPA, the DEIS relied upon dated forecasts and did not reflect current forecasts made by PacifiCorp.

The 2013 IRP referenced in the DEIS contains different forecasts of existing capacity and resource needs. For one, the 2013 IRP uses a lower existing resource capacity of 10,010 MW (2013) versus 12,500 MW (2011) cited in the DEIS.[13] The drop in existing capacity reflects the current resource needs of PacifiCorp. The 2013 IRP forecasts resource needs (including reserves) of 11,762 MW, or 3,238 MW lower than the 15,000 MW resources needed in 2020 cited in the DEIS.[14] The 2013 IRP does forecast a resource gap of 2,274 MW in 2020, but this is 1,578 MW lower than the resource gap of 3,852 MW cited in the DEIS.[15]

---

[11] PacifiCorp. 2011 Integrated Resource Plan Volume 1. March 31, 2011. Page 3.

[12] BLM (2014). Page A-7.

[13] PacifiCorp. (2013). Page 5.

[14] PacifiCorp. (2013). Page 5.

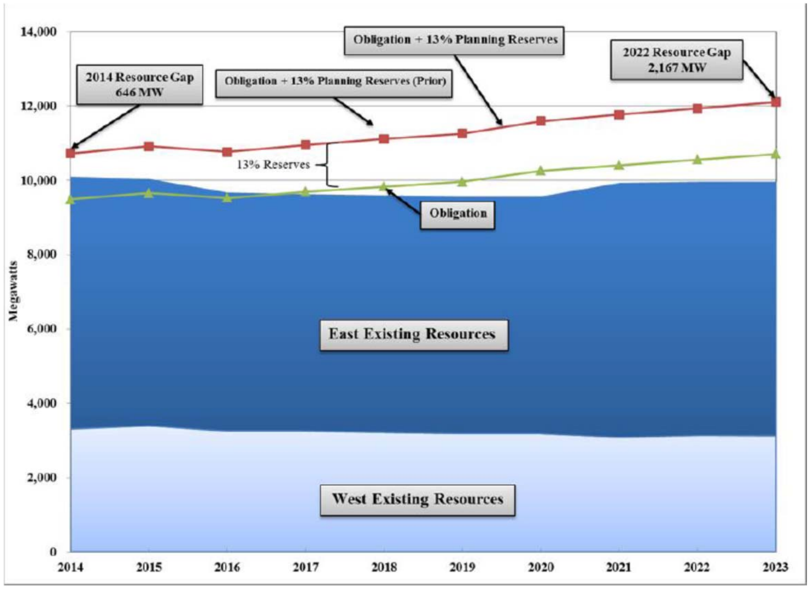
[15] PacifiCorp. (2013). Page 5.

SI5

Sierra Club (cont.)

In March 2014, PacifiCorp released its 2013 Integrated Resource Plan Update, which modifies the resource forecast.[16] The 2013 IRP Update adjusts the 2014 Existing Resource to 10,085 MW in 2014 and forecasts a resource need (including reserves) of 11,596 MW in 2020.[17] The 2013 IRP Update resource need is 166 MW lower than the 2013 IRP. The resource gap in 2020 in the 2013 IRP Update is 2,042 MW, or 1,810 MW lower than the gap cited in the DEIS. This is a considerable adjustment and is reflected in the following graph of the 2013 IRP System Capacity Position Trend.[18]

Figure 3: PacifiCorp 2013 IRP Update, System Capacity Position Trend



For accuracy, the updates in the PacifiCorp load forecasts and resource needs must be factored into the DEIS. These updated values show that by relying on stale data the DEIS overstates the capacity gap,

---

[16] PacifiCorp. PacifiCorp- 2013 IRP Update Chapter 3 Resource Needs Assessment Update. Dated March 31, 2014.
[17] PacifiCorp. (2014). Table 3.11. Page 30.
[18] PacifiCorp. (2014).Figure 3.2. Page 35.

Comment(s)

Response(s)

SI5 **Sierra Club (cont.)**

which in turn inflated the need for additional transmission capacity. In sum, the DEIS's purpose and need sections are based on the outdated premise that load growth justifies the proposed project.

THE DEIS FAILS TO EXAMINE THE EFFECT OF ALTERNATIVE TRANSMISSION PROJECTS ON THE NEED FOR GATEWAY SOUTH.

Finally, the proposed TransWest Express transmission project[19] would deliver energy and capacity from southeastern Wyoming to the Las Vegas, NV area. While the routing of this proposed transmission line is different from the proposed Gateway South project, there would be some redundancy. Furthermore, its wholesale market transacting capability would be similar to the proposed Gateway South project: it would allow wholesale transfers of energy from the Rocky Mountain region to the Desert Southwest region. The DEIS did not analyze the change in project need should the reasonably foreseeable TransWest Express project be built. While the proposed Gateway South project allows for the delivery of Wyoming energy to Utah and the TransWest Express project delivers fully through to Nevada, contracting some of the capacity available on the TransWest Express line and delivering it "back" to Utah could fully supplant the need for the proposed Gateway South project. The TransWest Express project combined with the reduced resource need described above seriously undermines the DEIS's rationale for the proposed project.

Another alternative that the DEIS fails to consider is the proposed Zephyr direct current (DC) line that would also deliver energy and capacity from southeastern Wyoming to the Las Vegas, NV area.[20] It too follows a similar path as the proposed Gateway South project.[21] Although this proposed project would be a high voltage DC line between Wyoming and Nevada, the DEIS does not consider the possibility of contracting some of the capacity available on the Zephyr line and delivering it "back" to Utah – which could fully supplant the need for the proposed Gateway South project.

Lastly, we note that other proposed transmission projects would bolster import capacity to the Las Vegas area: projects under consideration by Great Basin Transmission (Southwest Intertie Project) and Nevada Power and Sierra Pacific Power (from western central Nevada through the Amargosa Valley towards Las Vegas) could lead to increased availability of power from the Las Vegas area to PacifiCorp's Utah load areas.[22] These projects too can be considered as alternative forms of western region transmission that could mitigate the need for the Gateway South project.

---

[19] See http://www.transwestexpress.net/ for summary description of the TransWest Express project.

[20] See http://www.datcllc.com/datc-projects/zephyr/faqs/ for summary description of the Zephyr project.

[21] http://www.wecc.biz/Planning/TransmissionExpansion/Map/Pages/default.aspx

[22] See http://www.swipos.com/ for summary description of the Southwest Intertie Project.

Comment(s)

Response(s)

SI5 **Sierra Club (cont.)**

THE DEIS DID NOT ADEQUATELY EXPLORE NON-TRANSMISSION ALTERNATIVES

The discussion of alternatives is the "heart" of the NEPA process.[23] NEPA requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[24] An EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project in order to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision-maker and the public."[25]

The DEIS briefly considered energy efficiency and demand response, but only concluded that "Energy Efficiency and Demand Response are valuable Tools that the Applicant is using and will continue to use to manage the demand and consumption of energy."[26] The DEIS did note recent PacifiCorp energy efficiency and demand response programs and referenced a 2013 Cadmus Demand Side Management potential study.[27,28] The PacifiCorp 2013 IRP included three demand-side management programs as existing resources that lower the load forecast by 653 MW in 2013 to 639 MW from 2015 onward.[29] The 2011 IRP incorporated 556 MW of demand-side management programs.[30] The Cadmus Group's 2013 potential study identified 6,797 MW of demand-side management technical potential in 2032 and 884 MW of Achievable Technical and Market Potential.[31] Additional demand-side management alternatives should be explored more comprehensively as a non-transmission alternative that could defer or eliminate the need of the proposed transmission project.

As noted above, the TransWest Express, Zephyr and Gateway South proposals are three major transmission projects that could run between Wyoming to Nevada or Utah; BLM should consider investigating the impact of the three projects comprehensively rather than separately as single projects independent of another. BLM should consider a NTA alternative that examines the impact of permutations of the three different proposals to see if all three projects are needed.

---

[23] 40 C.F.R. § 1502.14.
[24] 42 U.S.C. § 4332(2)(E).
[25] 40 C.F.R. § 1502.14(a).
[26] BLM. (2014). Page 2-123.
[27] BLM. (2014). Page 2-122.
[28] Cadmus Group. Assessment of Long-Term, System-Wide Potential for Demand-Side and Other Supplemental Resources, 2013-2032 Volume I. March 2013.
[29] PacifiCorp. (2013). Chapter 5 Resource Needs Assessment. Page 90.
[30] PacifiCorp. (2011). Chapter 5 Resource Needs Assessment. Page 91
[31] Cadmus. (2013). Page 2.

Comment(s)

Response(s)

SI5

Sierra Club (cont.)

THE DEIS DID NOT ADEQUATELY EXPLORE THE LONG-TERM IMPACTS ASSOCIATED WITH THE PROPOSED TRANSMISSION PROJECT

DEIS FAILED TO DISCUSS CORRIDORS OF CONCERN.

The DEIS identified that the proposed Gateway South contains three corridors of concern from a 2009 Settlement in *The Wilderness Society et al. v. United States Department of Interior et al.* (Case No 3:09-cv-03048-JW [Northern District of California]). The three corridors are listed in the DEIS in Table I-2 and noted in Table 3-146.[32,33] The DEIS failed to detail how the proposed project facilitates renewable energy and avoids environmentally sensitive areas. Specifically, all three corridors of concern mention the access to coal-fired power plants.[34] While the DEIS notes "the Project alternative routes that are currently located within corridors of concern (Table 3-146) will require additional assessment to ensure all impacts are addressed,"[35] it does not appear that the additional assessment is included in the DEIS.

The DEIS projects that the proposed transmission project will have a life of at least 50 years.[36] Thus, adequately evaluating the long-term impact of the proposed project to facilitate renewables and to minimize access to coal-fired plants is critical.

DEIS FAILED TO EXAMINE CLIMATE CHANGE IMPACTS.

President Obama has been very clear that the nation must drastically cut carbon pollution in order to "protect the health of our children and move our economy toward American-made clean energy sources that will create good jobs and lower home energy bills."[37] Reducing the generation and transmission of harmful fossil fuels is central to the President's plan. In a few cases, new large-scale transmission will be needed to carry remote renewable energy resources to load centers. However, renewable energy and associated transmission development must be carefully scrutinized through the NEPA process. Given the urgency of climate change, the BLM can no longer casually grant transmission rights of way based on cursory showings of need by the applicant. Equally important, federal agencies must also investigate and disclose a proposed project's potential impacts on climate, and propose all feasible non-transmission alternatives.

Here, the DEIS fails to address comprehensively the proposed Gateway South impacts on global climate change. Along with the President's Climate Action Plan, NEPA requires that federal agencies "recognize

---

[32] BLM (2014). Chapter I- Purpose and Need. Page 1-19.

[33] BLM (2014). Chapter 3 Affected Environment and Environmental Consequence. Page 3-645.

[34] BLM (2014). Chapter 3 Affected Environment and Environmental Consequence. Page 3-645.

[35] BLM (2014). Chapter 3 Affected Environment and Environmental Consequence. Page 3-645.

[36] BLM (2014). Chapter 2 Proposed Action and Alternatives. Page 2-35.

[37] The President's Climate Action Plan (June 2013). Page 5. http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf

Comment(s)

Response(s)

SI5 **Sierra Club (cont.)**

the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment."[38]

The DEIS failed to follow both NEPA and the President's Climate Action Plan by omitting an analysis of the type of energy generating resources that would benefit from the proposed line. Absent this essential analysis, neither the BLM nor the public have a clear idea of whether new renewable resources or existing fossil fuel generation will utilize the line. The DEIS must make some effort to assess how the line will be utilized. Rather than engage in the rigorous analysis required by NEPA, the DEIS evaded this critical issue with the following language: "The GHG emissions are regulated under federal requirements that include mandatory reporting and GHG emission permits for major sources. It is not expected that the types of sources that will be part of the Project would be subject to these Rules."[39] With this conclusory statement, the DEIS ignored the very real fact that PacifiCorp could interconnect its major fossil fuel generating stations to the Gateway Project.

Although the DEIS narrowly analyzed carbon dioxide emissions associated with the project's construction and operation, it failed to consider broad-scale methods of reducing carbon emissions through alternatives (non-transmission or duplicative siting) to the proposed project in order to minimize impacts on climate change.

THE BLM SHOULD INCORPORATE ADDITIONAL INFORMATION INTO THE FINAL ENVIRONMENTAL IMPACT STATEMENT TO ADDRESS HOW MARKET DEVELOPMENTS CHANGES WILL INFLUENCE UTILIZATION OF THE PROPOSED TRANSMISSION LINE

IMPENDING CHANGES IN WHOLESALE MARKETS THAT WOULD AFFECT HOW GATEWAY SOUTH TRANSMISSION ASSETS WOULD BE UTILIZED ARE NOT FACTORED INTO THE DEIS.

The DEIS contains no modeling information on changes to wholesale electric power transactions with the line in place that would affect the impacts of the line. PacifiCorp may soon (October, 2014) be part of the California Independent System Operator (CAISO) energy imbalance market, with the capability of delivering its resources into the California market. This market development, coupled with the presence of increased transmission capacity from the Carbon County area, has the potential to dramatically increase the level of coal-fired energy generation in the PacifiCorp region for ultimate delivery (as part of a portfolio of resources) to California. Some form of electric power sector production cost modeling should be undertaken as part of the environmental impact assessment in order to gauge such potential outcomes.

---

[38] 42 U.S.C. § 4332(f).

[39] BLM. (2014) Chapter 3 Affected Environment and Environmental Consequence. Page 8.

In conclusion, it is our understanding that redundancy, reliability and grid upgrades are among the leading justifications for Gateway South. Because the DEIS failed to adequately disclose the need for the proposed project and did not describe or evaluate a reasonable range of alternatives, a revised DEIS should consider the extent to which reliability goals can be achieved through less environmentally damaging means.

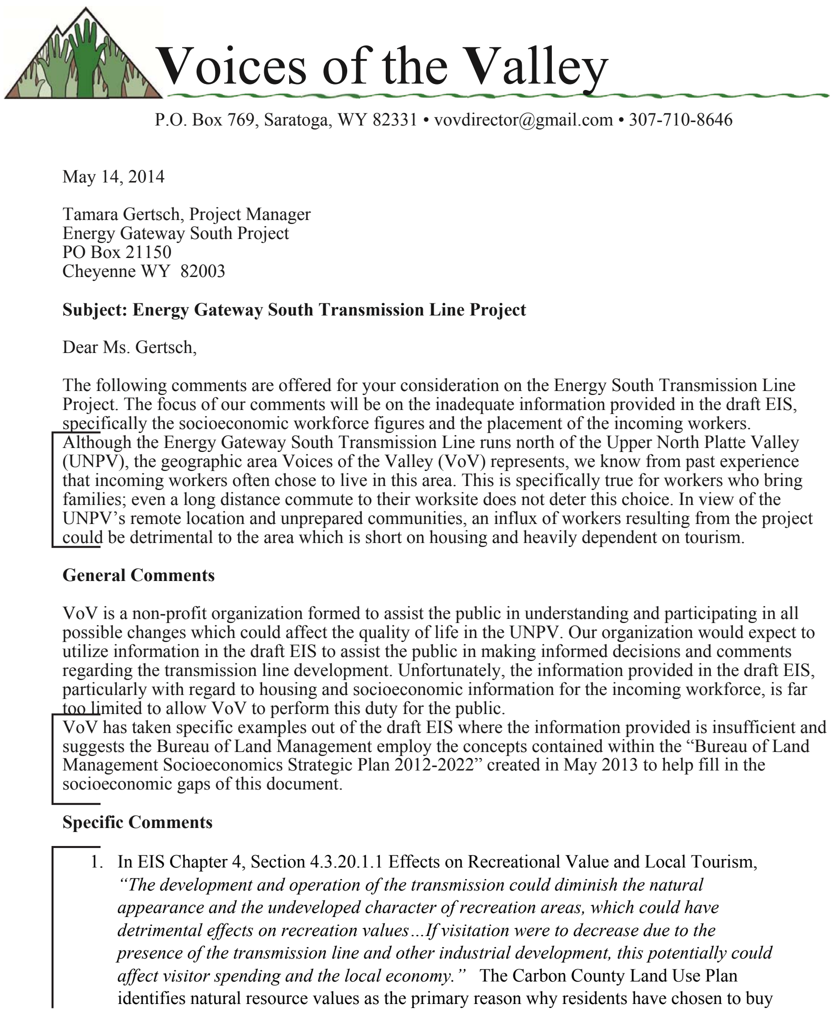
Thank you for the opportunity to provide comments on the BLM's draft DEIS for the proposed Gateway South project. We recommend that the BLM incorporate PacifiCorp's most recent load forecasts and examine in depth non-transmission alternatives that could in total defer and/or obviate the need for this project. This includes a comprehensive impact of all three proposed transmission projects (Gateway South, TransWest Express, and Zephyr).

Sincerely,

Bob Fagan and Max Chang
Synapse Energy Economics

Comment(s)

SI6 | **Voices of the Valley**



Voices of the Valley

P.O. Box 769, Saratoga, WY 82331 • vovdirector@gmail.com • 307-710-8646

May 14, 2014

Tamara Gertsch, Project Manager
Energy Gateway South Project
PO Box 21150
Cheyenne WY 82003

Subject: Energy Gateway South Transmission Line Project

Dear Ms. Gertsch,

The following comments are offered for your consideration on the Energy South Transmission Line Project. The focus of our comments will be on the inadequate information provided in the draft EIS, specifically the socioeconomic workforce figures and the placement of the incoming workers.

SI6a

Although the Energy Gateway South Transmission Line runs north of the Upper North Platte Valley (UNPV), the geographic area Voices of the Valley (VoV) represents, we know from past experience that incoming workers often chose to live in this area. This is specifically true for workers who bring families; even a long distance commute to their worksite does not deter this choice. In view of the UNPV's remote location and unprepared communities, an influx of workers resulting from the project could be detrimental to the area which is short on housing and heavily dependent on tourism.

General Comments

VoV is a non-profit organization formed to assist the public in understanding and participating in all possible changes which could affect the quality of life in the UNPV. Our organization would expect to utilize information in the draft EIS to assist the public in making informed decisions and comments regarding the transmission line development. Unfortunately, the information provided in the draft EIS, particularly with regard to housing and socioeconomic information for the incoming workforce, is far too limited to allow VoV to perform this duty for the public.

SI6b

VoV has taken specific examples out of the draft EIS where the information provided is insufficient and suggests the Bureau of Land Management employ the concepts contained within the "Bureau of Land Management Socioeconomics Strategic Plan 2012-2022" created in May 2013 to help fill in the socioeconomic gaps of this document.

Specific Comments

SI6c

1. In EIS Chapter 4, Section 4.3.20.1.1 Effects on Recreational Value and Local Tourism, *"The development and operation of the transmission could diminish the natural appearance and the undeveloped character of recreation areas, which could have detrimental effects on recreation values…If visitation were to decrease due to the presence of the transmission line and other industrial development, this potentially could affect visitor spending and the local economy."* The Carbon County Land Use Plan identifies natural resource values as the primary reason why residents have chosen to buy

Response(s)

SI6a

It is true that construction workers can temporarily reside a fair distance from the Project location, especially in remote areas. The communities in the Upper North Platte Valley, such as Saratoga and Riverside, may be affected by construction workers temporarily residing in these towns. Additional discussion has been added to Section 3.2.22 describing these workforce housing issues in smaller towns and how the tourism lodging in smaller towns can be affected by construction workforce occupying the often sparse lodging options. Additionally, smaller towns within 20 miles from the transmission line have been identified and described in Section 3.2.22. Workforce impacts related to housing in specific locations and towns will be addressed during the county and/or state permitting phase of the Project (e.g., the Wyoming Industrial Siting Permits). Additionally, the Applicant employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

SI6b

Comment noted.

SI6c

Construction workers are likely to temporarily reside in small towns with limited housing and lodging establishments, with possible impacts on tourism, visitor spending, and recreation in the areas. The communities in the Upper North Platte Valley, such as Saratoga and Riverside, may be affected by construction workers temporarily residing in these towns. Additional discussion has been added to Section 3.2.22 describing these workforce housing issues in smaller towns and how the tourism lodging in smaller towns can be affected by construction workforce occupying the often sparse lodging options. Additionally, smaller towns within 20 miles of the transmission line have been identified and described in Section 3.2.22. In addition, mitigation recommendations and requirements for workforce impacts related to housing in specific locations and towns will be addressed during the county and/or state permitting phase of the Project (e.g., the Wyoming Industrial Siting Permits). Additionally, the Applicant employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

Comment(s)

SI6 **Voices of the Valley (cont.)**

SI6c property and live in the area, as well as recreate. The UNPV boasts a thriving tourism economy, in fact, it leads the economy in dollars produced and has held that top position for the last 20+ years. Hunting, fishing and recreation via ATV or other modes of transportation, in both the Snowy and Sierra Madre ranges, is not considered in the analysis of the current socioeconomic status even though the potential worksites are less than 15-20 miles away. Temporary accommodations such as hotels and camping sites could be hugely affected by an influx of incoming workers either residing or recreating in the UNPV. The draft EIS offers no mitigation plan for the potential dismantling of the No. 1 industry in the UNPV, tourism.

SI6d

2. Chapter 4, Section 4.3.20.3.1 Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO), *"...In Wyoming where there are multiple existing and future wind facility developments occurring and expected in the foreseeable future near the communities of Aeolus, Hanna, Sinclair, Rawlins, and Wamsutter, it may be the case that these communities are near housing and accommodations capacity. To the extent that the Applicant can locate its workers so as to not cumulatively affect these communities, this could mitigate these adverse effects on housing and public services. Additionally, the Applicant could provide temporary housing and basic services to its workers to mitigate these effects on communities, housing, and public services."* The UNPV communities of Saratoga, Encampment and Riverside are not listed as communities that could potentially be affected by multiple developments, yet Saratoga sits just seven miles from the southeastern boundary of the Chokecherry Sierra Madre wind development and only 20 miles south of Interstate 80. The Applicant has not given a solid commitment in the above section to provide temporary housing and basic services to its workers to mitigate the impacts on the small communities of Carbon County, specifically those in the UNPV. Cumulative effects of the many major energy projects happening around the UNPV have not been sufficiently analyzed in this project's DEIS.

SI6e By utilizing the goals and strategies of the "BLM Socioeconomic Strategic Plan 2012-2022", the authors of the Energy Gateway South Transmission Line draft EIS could provide the public more real-time data on the incoming workforce and its potential impacts on the economies of local communities.

Sincerely,

KayCee Alameda
Executive Director, Voices of the Valley

Response(s)

SI6d

Multiple large-scale projects are under construction in southwestern Wyoming. If these construction schedules occur during the same timeframe, they could tax the area's resources (housing, lodging, workforce) while at the same time potentially removing the availability of some of the same resources to tourism. While construction timeframes are generally known, they could shift based on permitting schedules and the availability of construction materials, etc. Thus, conducting a quantitative analysis of real-time workforce impacts is not possible.

The socioeconomics analysis in Section 4.3.22 has been expanded to include a qualitative discussion to better clarify the impacts of coinciding construction schedules. For example, a statement of the worst-case scenario would be described: if, in Wyoming, oil and gas development continues at a high rate and proposed wind energy projects and the TransWest Express transmission project are constructed at the same time as the Project, impacts on housing and workforce would occur. This would include a discussion of the towns most likely to be affected by these projects and how they would be affected. In addition, small towns within 20 miles of the Project have been included in Section 3.2.22, including population and housing resources.

SI6e See the comment response to SI6d.

Comment(s)

SI7 **Western States Sportsman Alliance**

Comments for the Gateway South Power Line

Western states Sportsman Alliance (W.S.S.A.)

W.S.S.A. Is a coalition of 9 western States that was organized to promote the interest of western states in matters Such As Oil and Gas exploration, Alternative power sources, land development, wildlife, fishing, mining, and the private interests of western states.

The following are representatives the States that the Southern Power line crosses

Utah	Lee Howard
Colorado	Terry Meyers
Wyoming	Niel Thaggard

Appendix 1 programmatic Agreement

Signatory Parties include

B..LM. Us Forest service, National Parks, Colorado, Utah, Pacific Corp, 33 Indian Tribes

Appendix K

Mitigation Guidance

SI7a SI7b Identifying measures for compensation to include improving existing habitat for Sage grouse. If power lines cross or intersect any Sage grouse Leeks Construction should be postponed until chicks have hatched or have moved out of area. All water sources should be considered for migratory birds. To improve existing water sources when necessary. Property May Need to be purchased to insure proper or suitable habitat.

Creating or restoring vegetation and the landscape should be of the upmost priority.

Planning Issues and Criteria

Utah has spent millions of dollars on the re-introduction of native species of wildlife into their previous habitat.

SI7c Existing plans need to be addressed for the Reintroduction of the Utah Wild Sheep.

To include Rocky Mountain Bighorn.

Desert Bighorn

Mountain Goats

Sage Grouse, Antelope

Deer, Elk, Turkeys

SI7d **POACHING** of wildlife has been a problem with the Oil well development in the Uinta Basin. The Department of Wildlife Resources noticed an 80-90 percentage increase in the illegal taking of wildlife. This problem needs to be addressed by All parties involved in the building of the power line.

Response(s)

SI7a Potential high adverse impacts in sage-grouse habitats will be minimized through the application of the design features and selective mitigation measures listed in Table 3-102. High residual impacts on sage-grouse habitat remaining after application of the design features and selective mitigation measures will be addressed via offsite mitigation as described in Appendix F.

SI7b For the Final EIS, the BLM has revised and expanded the analysis of effects on migratory birds. This revised analysis is located in Section 3.2.9 of the Final EIS. Applicable minimization measures are listed in Section 3.2.9, Mitigation Planning and Effectiveness, and include measures similar to those proposed. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys).

SI7c Comment noted. BLM actively coordinates with state wildlife agencies regarding wildlife reintroductions and big game management. Potential impacts on existing big game and other wildlife populations are addressed in Sections 3.2.7.5.5 and 3.2.8.5.4.

SI7d Poaching of wildlife is disclosed as a potential indirect effect of the Project in Section 3.2.7.4.3, Impact Assessment and Mitigation Planning.

Opportunities for poaching in big game habitat will be reduced through the application of Selective Mitigation Measure 15, limitation of access to sensitive habitats (Table 3-80). Access roads that cross sensitive habitats (e.g., wildlife management areas and crucial, severe or critical winter range) would be gated or otherwise blocked, where feasible, to limit public access. This selective mitigation measure would limit human activity, and stress and disturbance to wildlife and their habitats during critical life cycle periods.

Comment(s)

SI7 **Western States Sportsman Alliance (cont.)**

Appendix C
Visual Resources Supporting Data

Concerns of Aesthetics Scenic or historic sites have been identified .
Sites as pre-historic whitings dwellings and Native Indian lands.

SI7e New roads will be built to support access to the power lines. These reads could be used by ATV enthusiasts as trails to ride and enjoy the new and open country. Where not applicable the roads should be Re seeded by natural grasses and sage brush and other native vegetation.

SI7f **Designated Roads** and trails or access to public lands should be maintained. All 2477 roads shall be kept open and maintained for public access.

State Trust lands, B.L.M. Forest Service.

SI7g Grazing on the public lands is the back bone of the rural communities and ranchers. There are millions of acres that are used to feed livestock. In reviewing the AUM'S there are numerous pages of listed operators that depend on the grasses of the of the A.U.M'S. Some compensation may be applicable for the ranchers.

Signatory Parties

SI7h The Western States Sportsman Alliance is requesting that we become a signatory party representing the General public and the sportsman in the three states that Gateway South Power line crosses.

This document is being submitted by Utah representative

Lee Howard
2929 Kenwood St
Salt Lake City, Utah 84106
801 209-2284
E-mail lhoward8830@msn.com

Response(s)

SI7e Limiting surface disturbance related to access roads and construction areas is addressed in the Applicant's project description (for example, Sections 2.3.3 and 2.4.2.3), including Design Features 1, 3, and 6 (which are accepted by the Applicant as part of the project description), and through application, where appropriate, of Selective Mitigation Measures 1, 2, 5, 7, 12, and 15 (refer to Table 2-13). Also, as described in Design Feature 2, a Reclamation, Revegetation, and Monitoring Framework Plan will be included in the POD that would identify reclamation stipulations such as reseeding.

SI7f See response to Comment SI7f.

SI7g The BLM will issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing the Applicant must acquire all access permissions for lands outside of their jurisdiction. The Applicant must also establish agreements with other permittees to resolve conflicts with other permitted uses on BLM-administered lands along the selected route, which could include compensation for economic impacts or losses. Animal unit months for each allotment are based on what each federal or state land-management agency determines the natural resources can support that year. In the long-term, the Project would only remove grazing areas where the towers or series compensation stations occupy the land. Impacts on grazing allotments are discussed in Section 3.2.11.5.2 and Appendix L.

SI7h Thank you for your interest. The Western States Sportsman Alliance does not meet these requirements under the CEQ regulations for cooperating agency status. The BLM and USFS decision-makers have not established any committee, commission, or similar group to provide advice or recommendations on issues related to their respective decisions; thus, the opportunity to participate as a signatory party is not available.

SI8 WildEarth Guardians

WildEarth Guardians
A Force for Nature
25 Years

May 22, 2014

Tamara Gertsch
National Project Manager
Energy Gateway South Project
Bureau of Land Management
P.O. Box 21150
Cheyenne, WY 82003

Cheryl Probert, Responsible Official
Deputy Supervisor, Uinta-Wasatch-Cache N.F.
857 West South Jordan Parkway
South Jordan, Utah 84095

Re: **Comments on Gateway South Power Line Draft Environmental Impact Statement**

Dear Ms. Gertsch and Ms. Probert:

WildEarth Guardians ("Guardians") appreciates this opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) for the proposed Gateway South transmission project (GWS). These comments are being submitted to the Bureau of Land Management (BLM) and the Forest Service (USFS) in light of the notices published by both agencies soliciting comments on the project. Guardians is an interested party with concerns, recommendations, and objections relating to the proposed action as well as the other action alternatives studied in detail. We thank the BLM and the USFS for each taking a minute to ensure that Guardians is added to all contact, mailing, and interested party lists for this and all related projects.

Incorporation of Jointly Submitted Comments

Guardians supports and signed onto the set of comprehensive DEIS comments submitted to the BLM by Daly Edmonds on behalf of a coalition of nine organizations. As they are a part of the project file or record, they are hereby incorporated by reference into these comments. Please consider and treat the comments, concerns, recommendations, and objections found in the pages below to be in addition to and synergistic with the incorporated comments.

1817 South Main Street #10 Salt Lake City, UT 84115 801-466-4055 fax 505-213-1895 www.wildearthguardians.org
DENVER • EUGENE • LARAMIE • MISSOULA • PORTLAND • SAN DIEGO • SANTA FE • SALT LAKE CITY • TUCSON

	Comment(s)	Response(s)
SI8	**WildEarth Guardians (cont.)**	
	Concern With Disclosure and Analysis of Land Management Plan Amendments; MIS	
SI8a	The proposed actions as well as each of the action alternatives have components that are not in compliance with the BLM Resource Management Plan (RMP) and USFS Forest Plans ("Forest Plan" or "LRMP") that overlap with the proposal. As noted in various points in the DEIS, this is said to result in each of the action alternatives studied in detail including site-specific and/or programmatic RMP and LRMP amendments. However, we note that DEIS chapter 2 doesn't appear to adequately disclose or describe the specifics of the unique and different BLM RMP and USFS LRMP plan amendments that will be requisite for each alternative. This results in a confusing aspect to DEIS chapters 2 and 3. DEIS chapter 3 and supporting environmental analysis in the resource specialist reports, also, do not adequately analyze the differing potential programmatic and site-specific impacts involved with the different requisite RMP and LRMP amendments that appear to be inextricably connected to each such proposed alternative course of action. This comment concerns these processes for the BLM and USFS management plans; however the concern appears to be greater for USFS LRMP amendments.	Potential plan amendments are presented and analyzed by alternative route and route variation in Chapter 5.
	Treatment of Best Available Science and Management Indicator Species (MIS) Insufficient under NEPA, Unclear Under NFMA	
SI8b	It is never clear what set of NFMA regulations and rules are being applied. Later in these comments we address this issue earlier. However, Forests currently have options to amend LRMPs under the NFMA regulations in effect prior to 2000 (e.g. 1982) or under the 2012 regulations. See, for example, the direction in the 2012 NFMA transition regulation.	Text is added to Chapters 1 and 5 of the Final EIS to clarify that LRMP amendments are proposed under the 1982 planning rule.
SI8c	There is a failure that shows up consistently in the DEIS where the analysis doesn't use the best available science, which is requisite for any set of NFMA regulations since 1999 that Federal Courts have not thrown out on grounds they were illegal (e.g. 2005 to 2008 NFMA rules and regulations). Not dissimilar form the 2000 NFMA rules, the 2012 NFMA planning regulations provide, "The responsible official shall use the best available scientific information to inform the planning process required by this subpart." 36 C.F.R § 219.3. NFMA requires a number of specific steps to be taken in the use of the best available science, as follows: In doing so, the responsible official shall determine what information is the most accurate, reliable, and relevant to the issues being considered. The responsible official shall document how the best available scientific information was used to inform the assessment, the plan decision, and the monitoring program as required in §§ 219.6(a)(3) and 219.14(a)(4). Such documentation must: Identify what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered.	As described in the USFS specialist reports prepared to support Project analysis and the EIS, the agencies believe they have incorporated the best available science into the analysis of potential effects of the Project. Between preparation of the Draft EIS and Final EIS, the analysis was updated to include any updates to the USFS life history documents, relevant new scientific publications, and any other new data. The agencies encourage Wild Earth Guardians to provide information or studies that they feel may not have been included in the analysis.

	Comment(s)	Response(s)
SI8	**WildEarth Guardians (cont.)**	
SI8d	36 C.F.R. § 219.3 (2012) set requirements not met in the DEIS. The same is so in those portions of the EIS where the NFMA rules or regs dating to 2000 are cited or otherwise relied upon. With this in mind, and be it under the 2000 and/or the 2012 (transition) rules, Guardians comments that the Forest Service is bound to render these determinations regarding incorporating the best available science on a point-by-point basis, particularly as referencing avoidance distances for power lines and set-backs from sage grouse Priority Habitats, nesting habitats, and active lek sites.	See response to Comment SI8c. See response to Comment SI8b.
	The DEIS is not adequate in relation to its disclosure or its environmental analysis related to MIS selection or requisite analysis of the effects of the planning alternatives being considered considered on the quantitative populations of each Forest's selected MIS. This is so for each of the 4 LRMPs involved and potentially in need of LRMP amendment as a part of each of the action alternatives proposed.	
SI8e	Importantly, there is no action alternative that does not trigger at least one LRMP amendment. There has always been debate about if MIS selection and quantitative population analysis is or is not required in strictly site-specific projects implementing one LRMP. Such duties have always been requisite for projects and plans that amend an LRMP. See for example, the enclosed order by the Federal District Court of Utah in UEC v. Richmond (2006) that explicitly reinstated the 10 MIS that the Ashley National Forest had illegally amended out of its LRMP.	USFS Management Indicator Species (MIS) are selected through the USFS planning process. A quantitative analysis of the potential effects of the Project and proposed LRMP amendments on each relevant USFS MIS was conducted and is included in the relevant USFS specialist reports. None of the potential Project-specific land-use plan amendments propose amendment of MIS species.
SI8f	These inadequacies exist to differing extents on each of the 4 LRMP's involved. The inadequacies specific to disclosure, as well as study of differing potential effects on the population status, trend, and habitats represented by each Forest's selected MIS, can and need to be resolved by inclusion of additional (sub)sections in the FEIS (especially chapter 3), as well as in the corresponding specialist reports.	A quantitative analysis of the potential effects of the Project and proposed LRMP amendments on each relevant USFS MIS was conducted and is included in the relevant USFS Specialist Reports and is incorporated by reference in the EIS where appropriate. Between preparation of the Draft EIS and Final EIS, the analysis was updated to include any updates to the USFS life history documents, relevant new scientific publications, and any other new data.
SI8g	Related to this concern, we believe that at times the DEIS explicitly misleads the reader concerning the National Forest-specific options relating to MIS selection and monitoring duties and options. This is so at the programmatic as well as site-specific levels. MIS selection and monitoring options and duties are found in the NFMA regulations dating to 1999 and earlier, as well as USFS Manual and Handbook policy dating well into the 2000's. As support, we refer the agencies to the enclosed 2002 white paper from the USFS Washington Office. It summarizes ongoing duties (in the wake of the 2000 NFMA regulations that replaced the 1999 regulations) concerning planning and project level for species diversity and viability, as well as associated monitoring options and requirements. Among other things, continuing MIS duties and options are outlined. However, the DEIS states different.	USFS does not agree that the language in the EIS is misleading to the reader. Rather, the text states the LRMPs were developed under 1982 planning rule, and MIS were identified during that process. USFS duties related to monitoring MIS habitat and population trends are associated with implementation of each National Forest's forest plan. While data collected during monitoring efforts are used in project-level analyses, specific monitoring actions are not required for analyses of site-specific projects.
SI8h	Please consider this example: The last bullet point on DEIS page 3-214 states that the NFMA regulations at the time all of the affected LRMPs were approved required MIS selection and analysis, and there is a cite to 36 CFR 219. It goes on to explain MIS selection and monitoring in the past tense, and the DEIS leads the reader to incorrectly believe that no LRMPs have been revised that carried forward the MIS related requirements since newer NFMA regulations have been available. The legal reality is that 2 out of 4 of the LRMPs involved were amended in 2003 explicitly incorporating the duties found in the (pre-2000) NFMA regulations for species viability and MIS at 36 CFR 219.19, 219.26, and 219.27. This is one example among many past	USFS does not agree that the language in the EIS is misleading to the reader. The same section of the EIS referenced in the comment identifies the LRMPs (as amended) for the three National Forests crossed as relevant to the analysis conducted for the project. The MIS species identified in the relevant LRMPs are incorporated by reference to the LRMPs and the analysis conducted in the USFS specialist reports and referenced in the EIS analyzes potential effects on each affected MIS. The project-specific land-use plan amendments do not propose a change in MIS species. The results of USFS' monitoring duties for MIS are reflected in the relevant USFS life history reports and are incorporated into the specialists' reports prepared for the Project.

SI8	Comment(s) WildEarth Guardians (cont.)		Response(s)
SI8i	tense references in the EIS to obligations that are categorically dismissed as inapplicable when the legal facts in the 10th Circuit (specific to these LRMPs) state that duties are real and in effect concerning MIS, as well as USFS Sensitive species programs and policies more broadly.[1] Yet both are discounted. EIS chapters 1-3, at a minimum, need to be expanded in light of these MIS and USFS Sensitive species duties, as well as corresponding requirements relating to LRMP amendments under either the 1982 (pre 2000) or 2012 NFMA regulations and rules. While there are additional reasons, as the rules implementing the 2012 NFMA regulations are still yet to be approved (but are expected to be to be located in the USFS NFMA Directives), Guardians recommends all LRMP amendments be under the pre 2000 NFMA regulations and rules.	SI8i	See responses to Comments SI8b and SI8f.
SI8j	Since early 2000, there have officially been 5 uniquely different sets of NFMA regulations (999/early 2000, late 2000, 2005, 2008, and 2012. In addition, between 2004 and 2005 one finds a series of additional interpretive regulations, some of which have been read to be retroactive and interpretive in the 10th Circuit. This is confusing even for some policy wonks. However, the DEIS cites to NFMA regulations and corresponding USFS rules and policies that, when researched, range from 1999 through 2012 while also having cites to everything between, except maybe the 2008 NFMA regulations. The DEIS is inadequate and not clear on everything relating to the NFMA and LRMP amendments.	SI8j	See response to Comment SI8b.
SI8k	What is clear is that, be it the 1982 (early 2000, as suggested at times in the DEIS) or the 2008 NFMA regulations and their important corresponding FSH and FSM Directives, the DEIS systematically fails to comply with the substantive and procedural duties found in either set of rules. This is so, actually, for all of the roughly 5 sets of NFMA regulations and rules that have ever been in effect. With the exception of action alternatives that avoid one National Forest over the other, not one of the LRMP amendments requisite for any of the action alternatives is adequately disclosed, studied or processed under the NFMA or NEPA processes that apply to Forest Service plan revisions or amendments (programmatic and site-specific).	SI8k	See responses to Comment SI8a and SI8b.
	DEIS Inadequate Due to Lacking Commitments to Avoid – Minimize – Compensate Impacts (to TEPCS and MIS species):		
SI8l	Compensatory mitigation should be pursued in cases where it is not possible to avoid or minimize impacts to sensitive resources, not as a first option. In all cases where it is possible to avoid impacts, this should be required. If avoidance is not possible, then line routings should minimize impacts to sensitive resources. If avoidance and minimization options have been exhausted and the resulting routing still results in significant impacts, then and only then compensatory mitigation should be required. The DEIS is inadequate under BLM and USFS policies and rules due to lacking disclosures, and due to lacking assurances that meaningful and binding mitigation measures shall be made as part of each action alternative being seriously studied.	SI8l	The BLM continues to work closely with FWS and the Applicant to develop avoidance and minimization measures to reduce effects on avian species based on industry best practices. Design features of the Proposed Action and site-specific selective mitigation measures would be used under all alternative routes and route variations to reduce effects of the Project on avian species. Applicable minimization measures are listed in Section 3.2.7.4.3, under the heading Mitigation Planning and Effectiveness. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys). The analysis for migratory birds was revised and expanded for the Final EIS. The revised analysis is presented in Section 3.2.9, and includes impacts of tower design and construction. BLM understands the Applicant has worked with the FWS, APLIC and other agencies to develop an APP for their facilities and distribution and transmission lines in their service territory. The APP and APLIC guidelines for protection and collisions are referenced at a high-level in the EIS. Project-specific standards, methods and measures, including avian-specific mitigation, will be described in the POD to be developed in coordination with the cooperating agencies.

---

[1] The 10th Circuit Court of Appeals has found (e.g. UEC v. Troyer, 2007, enclosed) that explicitly incorporated 1982 MIS duties found in LRMPs revised since 2000 must continue and the Circuit Court's review of projects on these National Forests is in light of those MIS duties. Worth additional note is that in the same case, the 10th Circuit Court of Appeals found that judicial review of the older Manti-La Sal LRMP must be in light of the newer NFMA "best available science standard" of review, which we raised earlier as not being adequately addressed.

	Comment(s)	Response(s)
SI8	**WildEarth Guardians (cont.)**	
SI8l	It is critically important that compensatory mitigation be fully disclosed, planned, and its impacts and compensatory potential be fully analyzed in the EIS. Compensatory mitigation projects should be implemented and their results to the sensitive resource in question fully understood before construction of the line segment for which compensatory mitigation is required is permitted to commence. Compensatory mitigation should be required to have applicant-funded monitoring of effect of the compensatory mitigation project area and also a "control" area where compensatory mitigation is not applied, so that the benefits (or lack thereof) of the compensatory mitigation can be measured in a Before-After-Control Investigation. If impacts to wildlife populations are anticipated, the compensatory mitigation producing an increase in target wildlife population levels (compared with population changes in control areas) corresponding to the projected decrease in wildlife populations negatively impacted by the project should be achieved prior to commencement of construction of the corresponding line segment. If impacts to sensitive plant populations are anticipated, a successful plant-for-plant successful recruitment to adults of the species should be achieved. Measuring compensatory mitigation based on acres treated or dollars spent is insufficient, because numerous compensatory mitigation projects in the past have demonstrated tens of millions of dollars spent and/or thousands of acres treated without successfully resulting in an increase in population for the target wildlife species.	
SI8m	**Sage Grouse:** A decision regarding the Gateway South project and which of the alternative lines and/or segments are selected for implementation should await completion of the various Greater Sage-Grouse RMP Amendments (Wyoming, Northwest Colorado, Utah, and California-Nevada) that overlap the proposed route alternatives. This is necessary to ensure that transmission lines avoid or are excluded from Priority Habitats designated in the plan amendments, in accordance with the final adopted direction included in these plan amendments. Importantly, the areal extent of Priority Habitats varies by alternative in some of these RMP amendments, making it difficult to ascertain whether a given line alternative would cross or be close enough to impact designated Priority Habitat lands. This makes it difficult if not impossible for the agencies to assess the level of impacts to sage grouse, as an approval of line segments across or adjacent to lands subsequently designated as Priority Habitats would effectively cancel out the conservation benefits of the Priority Habitat designation, putting the agency in a position of destroying the sage grouse habitats with one hand that it works to protect with the other.	The BLM has used the best available information pertaining to sage-grouse in preparation of the EIS for the Project (as well as federal sage-grouse planning efforts). BLM is not required to postpone all decisions that may be affected by the sage-grouse planning efforts and has issued agency-wide guidance for agency analyses and decisions during the planning process. These guidelines are described in Appendix K. If an action alternative is selected, the BLM's decision on the Project will comply with all applicable sage-grouse stipulations in BLM RMPs at the time it is issued.
SI8n	**Wyoming Route:** In addition to the concerns raised in the coalition comments to which Guardians is a signatory, we raise the additional concern that several of the proposed alignments for the transmission line could potentially cross the Rotten Springs LWC in Wyoming, which has been accorded full wilderness characteristics in BLM's inventory, and therefore impair its wilderness characteristics.	The Rotten Springs non-WSA lands with wilderness characteristics unit was incorporated into the BLM Rawlins Field Office non-WSA lands with wilderness characteristics inventory after publication of the Draft EIS, but has been incorporated into the analysis in the Final EIS (refer to Section 3.2.16).
SI8o	This LWC should be managed to protect its existing wilderness characteristics in full.	The BLM's process for inventorying non-wilderenss study area lands with wilderness characteristic units and its planning analysis and management decision (i.e., as to whether the area will be managed for those characteristics or for other priority multiple uses) is beyond the scope of the project-level EIS. All BLM field offices were contacted during preparation of the Final EIS for any updates to inventories of lands with wilderness characteristics. The information in the EIS includes the most current information.

	Comment(s)	Response(s)
SI8	**WildEarth Guardians (cont.)**	
SI8p	We are also concerned that several transmission line routings will be visible from overlook points atop the Skull Creek Rim in the Adobe Town Wilderness Study Area, and would therefore have a significant visual impact that impairs the wilderness experience to some degree for visitors to this area. The alignment chosen should keep the transmission line hidden from all points of the Adobe Town WSA, and BLM should undertake a view shed GIS analysis for all high points within this WSA, using the height of the proposed transmission line and its proposed alignments, to determine which (if any) line segments will be visible to visitors inside the WSA in order to determine the differing levels of impact under each alternative.	Impacts on views from the Adobe Town Wilderness Area, through the introduction of the Project, were assessed as low based on the distance from the closest alternative route (over 10 miles), the Agency Preferred Alternative (over 15 miles), and the viewing conditions from this area. As described on the visual contrast rating worksheet from Key Observation Point (KOP) #286 (refer to Appendix M), a closer point was chosen to assess effects on views for recreation users accessing Adobe Town due to the distance, amount of visual screening, and other factors leading to a weak level of visual contrast on views in the wilderness area.
SI8q	We would also point out that the Powder Rim is a critically important big game migration corridor, used by elk and mule deer, in addition to its importance for juniper obligate songbirds. Maintaining the integrity of this migration route is critical, and routing the transmission line along Wyoming Highway 789, as described in coalition comments Appendix A, will co-locate the impacts of the transmission line with the existing highway impacts on this migration corridor, minimizing additional disturbance to migrating deer and elk.	Comment and route preference noted.
SI8r	In addition to the concerns raised in the coalition comments to which Guardians is a signatory, we raise the additional concern that several of the proposed alignments for the transmission line could potentially cross the Rotten Springs LWC in Wyoming, which has been accorded full wilderness characteristics in BLM's inventory, and therefore impair its wilderness characteristics.	See response to Comment SI8n.
SI8s	This LWC should be managed to protect its existing wilderness characteristics in full.	See response to Comment SI8o.
SI8t	We are also concerned that several transmission line routings will be visible from overlook points atop the Skull Creek Rim in the Adobe Town Wilderness Study Area, and would therefore have a significant visual impact that impairs the wilderness experience to some degree for visitors to this area. The alignment chosen should keep the transmission line hidden from all points of the Adobe Town WSA, and BLM should undertake a view shed GIS analysis for all high points within this WSA, using the height of the proposed transmission line and its proposed alignments, to determine which (if any) line segments will be visible to visitors inside the WSA in order to determine the differing levels of impact under each alternative.	See response for Comment SI8p.

*would also be good to add a couple paragraphs regarding your concerns about the potential for creating an impassible barrier to sage grouse through multiple transmission lines that create an avoidance zone that bisects sage grouse populations and destroys connectivity and gene flow.

Conclusion

Thank you once more for this opportunity to provide comments to the BLM and to the USFS in response to both agency's' noticing and corresponding regulations governing comment and appeal or objection processes. We recognize and appreciate the time and dedication that BLM and USFS staff spend to ensure that responsible sustainable and renewable energy resources are developed and distributed in a manner that does not cause detrimental or significantly damaging impacts to TEPCS species or their habitats, big game and top predators, potential and proposed

Comment(s)

Response(s)

SI8 | **WildEarth Guardians (cont.)**

Wilderness areas, or the health and integrity of affected American ecosystems. Please mail a hard copy of the FEIS, draft and final RODs to WildEarth Guardians Utah office.

Sincerely,

Kevin Mueller,
Utah-Southern Rockies Conservation Manager
WildEarth Guardians
1817 S. Main St., Ste. 10
Salt Lake City, Utah 84115
(801)466-4055
kmueller@wildearthguardians.org.

Comment(s)

Response(s)

SI9 **Alliance for Historic Wyoming**

Alliance for Historic Wyoming
Protecting Wyoming's Historic Places
Barbara Dobos (Casper, WY) • Lesley Wischmann (Laramie, WY) • Mary Humstone (Fort Collins, CO) • Edre Maier (Sheridan, WY)
Trish Ullery-Whitaker (Kaycee, WY) • Dave Vlcek (Pinedale, WY) • Brie Blasi (Green River, WY) • Julia Stuble (Lander, WY)
Tom Tisthammer (Bellvue, CO) • Andrea Graham (Laramie, WY)
207 Grand Ave. | Laramie, WY 82070| 307.333.3508 | ExecDirector@HistoricWyoming.org | www.HistoricWyoming.org

Lesley Wischmann
712 S. 2nd St.
Laramie, WY 82070
307-742-5449
lesleywisch@wyoming.com

Tamara Gertsch, National Project Manager
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

20 May 2014

Dear Ms. Gertsch:

On behalf of the Alliance for Historic Wyoming (AHW), thank you for this opportunity to comment on the Gateway South Draft Environmental Impact Statement. These should be considered the formal comments of AHW, a statewide nonprofit organization dedicated to preserving our historic and cultural resources and empowering average citizens concerned with protecting Wyoming's irreplaceable resources for future generations. In light of our status as a Wyoming organization, our comments on this DEIS will be limited to resources within our state.

SI9a In addition, we request that AHW be considered an interested party for all future consultations under Section 106 of the National Historic Preservation Act (NHPA) as amended, and implementing regulations 36 CFR 800.2(c)(5) and 800.3(f)(3). The above listed address, phone number and email address made be used to contact us for Section 106 consultations. We have appreciated the opportunity to consult under Section 106 on this project in the past and look forward to future productive conversations regarding appropriate mitigation, in furtherance of the federal mandate to "seek and consider the views of the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties, [and] the likely interest of the public in the effects on historic properties…." 36 CFR §800.2(d)(1)

SI9a Comment noted.

First of all, AHW congratulates you on an incredibly thorough and well-crafted document. This may be the most comprehensive DEIS we have ever encountered. Although we believe you would have better served the public by breaking out the electronic document into more manageable pieces, with many more direct access links, no one can fault you on the detail of your analysis. We were especially impressed by the information provided regarding the cumulative impacts that may result from the likely placement of three high voltage transmission line projects (Gateway West, Gateway South and TransWest Express) in this area. Your detailed analysis of the potential interaction of these projects was both unusual and very much appreciated. This will not only help your readers better understand the extent of changes likely to occur in this area but also help assure them that the federal agencies are intent on living up to not only the letter, but also the spirit, of the governing laws. In addition, we found your inclusion of Table 2-13, "Selective Mitigation Measures," to be very helpful as this is the kind of

Comment(s)

Response(s)

SI9

Alliance for Historic Wyoming (cont.)

information the public rarely receives at this point in the process. So congratulations on a job very well done!

Of course, we still have concerns with this project and some issues with your analysis that we would like to raise. We believe that all of the proposed alternatives suffer from these shortcomings; however, we are willing to support the agency preferred WYCO-B alternative. While we have serious concerns with how this project, regardless of the route chosen, will continue the slow but relentless degradation of the Overland and Cherokee Trails, as well as the Rawlins to Baggs Stage Road, in this area, we believe you have done an exemplary job of illuminating these problems and that these impacts can be addressed through the Section 106 consultation process. The issue of cumulative impacts becomes a more significant concern, as that rarely seems to be adequately addressed during Section 106, but thanks to your thorough analysis, we can hope that advocates for these resources will be better equipped to argue for truly meaningful mitigation for direct, indirect and cumulative impacts during these consultations. We especially note your helpful conclusion that "**Off-site mitigation may be applied**, where feasible and through negotiations with the Applicant, for the life of the development in an effort to offset significant or high impacts of the Project that are not able to be mitigated," (Gateway South DEIS, p. 3-1147, emphasis added) as this issue has been an on-going point of contention.

SI9b

Our primary concerns with this DEIS revolve around how the impacts to our precious landscapes are being addressed. We were disappointed, although not really surprised, to find little in this otherwise comprehensive document pertaining to the important issue of cultural landscapes, and especially Rural Historic Landscapes. The National Park Service defines rural historic landscapes as "a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features." Furthermore: "Rural landscapes commonly reflect the day-to-day occupational activities of people engaged in traditional work such as mining, fishing, and various types of agriculture. Often, they have developed and evolved in response to both the forces of nature and the pragmatic need to make a living." (National Register Bulletin, "Guidelines for Evaluating and Documenting Rural Historic Landscapes, 1989, rev. 1999).

While the BLM has only recently begun to understand the importance of analyzing project areas for the presence of RHLs, your extensive and comprehensive analysis of this region's history clearly suggests the likelihood that a number of RHLs exist within the project area. For instance, Table 3-233 notes: "Throughout the Project area, a multitude of landscapes are defined by a rural character produced by swaths of irrigated agriculture that contrast with adjacent, semi-arid natural lands. Dispersed residences are also located throughout these landscapes, adding to the rural character." Moreover, in discussing Traditional Cultural Properties, the DEIS notes that these can include a "rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents." Another example of TCPs is: "A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity." (Gateway South DEIS, p. 3-1221.) These alternative definitions of what constitutes a Traditional Cultural Property are valuable as they expand the concept beyond the limited scope of properties important to the Native American communities. As we learned recently with the National Register designation of the Green River Drift as a Traditional Cultural Property, it is important to remember that all cultures and communities have their own unique relationship with the environment in which they live.

SI9b

Regional mitigation policy does apply but would apply through the process for complying with Section 106 of the Advisory Council on Historic Preservation. Rural historic landscapes that have been identified would be considered as part of the historic properties evaluation (under Section 106) and would be addressed in the Programmatic Agreement.

Comment(s)

SI9 **Alliance for Historic Wyoming (cont.)**

SI9b Since many of the Class III studies for this project remain to be conducted, this oversight in your analysis can still be corrected. We strongly recommend that your office ensure that those charged with conducting these studies for the NHPA Section 106 process demonstrate the familiarity with the concepts of Rural Historic Landscapes and/or the broader definition of Traditional Cultural Property illustrated above and that they be especially sensitive to the potential discovery of same during their surveys.

SI9c But our concern with the impact to landscapes from the proposed project goes well beyond what can, or should be, addressed through the NHPA Section 106 process. As you are well aware, the NHPA Section 106 process is limited to addressing impacts to only those properties that are eligible for listing on the National Register of Historic Places. 36 CFR §800.4(c)(1). Yet, as recent polling has shown (Colorado College, *"State of the Rockies,"* 2014), Wyomingites have a particularly strong connection with, and commitment to, their public lands. Few of these spaces could qualify for listing on the National Register, which was designed to recognize "buildings, structures, objects, sites, and districts worthy of preservation for their significance in American history, architecture, archaeology, and culture." Nevertheless, the fact that a particularly iconic local landscape does not enjoy NRHP-eligible status in no way diminishes its importance to the affected community. Nor does it absolve the BLM from addressing adverse impacts to that resource under NEPA.

We were very pleased to note your reference to the "human environment" in your "Impact Assessment and Mitigation Planning Process" document (Figure 2-6). NEPA defines the "human environment" as "the natural and physical environment and the relationship of people to that environment." 40 CFR §1508.14. This has been interpreted to require protections for wildlife, natural resources and the aesthetic, historic and cultural resources, including landscapes and sacred sites, as these terms are commonly understood, which connect humans to their environment. (Advisory Council on Historic Preservation, *NEPA and NHPA: A Handbook for Integrating NEPA and Section 106*, 2013, pp. 10-12) Too often, the "human environment" mandate in NEPA is glossed over by federal land management agencies.

SI9d Even in your admirable DEIS, you failed to carry these illuminating categories ("natural environment, human environment, cultural environment") into your narrative. Had you done so, I believe your analysis would have been even more insightful and would have likely resulted in different conclusions about the level of mitigation necessary to offset the dramatic impacts this project will likely have on the landscapes that Wyomingites value so deeply. As noted in the DEIS, the "American public is increasingly aware of the importance of the public lands to its well-being." (Gateway South DEIS, p. 3-1310)

When Wyomingite are asked what they value about their state, they almost invariably invoke the "open spaces," "broad vistas" and "endless landscapes." The gentle undulating hills, the cloud-shadows on an open landscape, the smell of sagebrush, the uninterrupted miles of viewscapes, the sound of wind unchecked by trees, the cluster of pronghorn antelope grazing in the distance, the prairie wildflowers decorating desert scrublands – all these are essential elements of Wyoming's human environment. Moreover, it is those little elements of the topography – almost unnoticed by the casual passer-by – that signals to a Wyomingite that he is home. It is the gentle curve in the road, the small hillock where we played as children, the slice of muddy ground we know will become a gentle stream come spring, the weathered cabin we have watched slowly burn in the sun, the subtle mix of greens and browns along with the splashes of red clay – these are the elements that quicken our hearts and welcome us back. These quiet elements constitute the backbone of Wyoming. They will never be significant enough to be listed on the National Register but no one will ever convince us that they aren't as important as that pretty Victorian with its NRHP plaque in some other Wyoming town.

Response(s)

SI9c See response to Comment SI9b.

SI9d See response to Comment SI9b.

Comment(s)

SI9 **Alliance for Historic Wyoming (cont.)**

This project will adversely impact hundreds, if not thousands, of these landscape elements. The cumulative impacts of this project, when combined with TransWest Express and Gateway West, will be even more profound. For a significant percentage of Wyoming's population, the construction of these three projects will forever alter their slice of Wyoming, their "human environment." And, contrary to the analysis in this DEIS, the impacts will not be abated by the cessation of construction operations. The completed infrastructure will create permanent intrusions on those views that these Wyomingites use to define their homes. Their sense of place and space will be permanently, irreparably and negatively impacted.

SI9e

We were delighted to read your acknowledgement that mitigation for this project "could include measures … for compensating for an impact by replacing or providing substitute resources or environments." Even more important was your recognition that "If applicable, ***additional mitigation requirements, including compensatory mitigation***, would be approved by the agencies and incorporated into the POD prior to Project construction." (Gateway South DEIS, p, 2-66, emphasis added.) We would suggest that compensatory mitigation is essential to address the adverse effects to the human environment that will be generated by this project and, even more so, as a result of the cumulative adverse effects that will result from the construction of all three high-voltage transmission lines in these areas. Those individual most directly connected to these areas will experience dramatic and permanent alterations of their environment. Only compensatory off-site mitigation can address these adverse effects to the human environment.

SI9f

We would especially draw your attention to the impacts to the community of Hanna. According to the Visual Contrast Rating Worksheet for Key Observation Point 197, "moderate/strong contract would result" to a "panoramic landscape setting associated with residences in Hanna, Wyoming." The proposed structures "would be seen at approximately 0.5 mile" and, because it would be considerably larger than the existing transmission line it would parallel, the new structures "would strongly contrast with the existing structural elements in the landscape." (Gateway South DEIS, p. H2-102) The visual simulations for this KOP dramatically illustrate your conclusion. However, despite these conclusions, you recommend no additional mitigation, presumably because the viewsheds from Hanna's residential area are not considered exceptional or worthy of special protections. This, however, is a perfect example of how vistas are difficult to value. For the residents of Hanna, almost certainly, this vista is one of the most precious of their community resources. Moreover, we note that Hanna is the one census block within the project area with environmental justice issues. This argues strongly for addressing the visual impacts this project will create since those who live in census blocks with environmental justice concerns are more likely than other communities to prize the non-market values inherent in their scenery, vistas and recreational opportunities. To simply dismiss the level of impact documented at KOP #197 threatens to further penalize this small, relatively non-influential community.

SI9g

AHW would further suggest that the type of compensatory mitigation that is warranted for the direct, indirect and cumulative effects to the human environment and landscapes created by this and other projects should be allocated in a manner that best addresses the specific and unique concerns of the adversely affected communities. While we have great appreciation for the work done by the cultural resource task groups that usually labor over appropriate and commensurate mitigation for adverse impacts to cultural resources, we also recognize that this group has become somewhat insular, with the same participants tending to take part in consultations regarding projects all across the state. This has had a tendency to produce a somewhat predictable array of mitigation measures. To really address the issues that these communities will face, we believe it is essential to get the input and best ideas from

Response(s)

SI9e

See respone to Comment SI9b.

SI9f

The EIS alignment of the alternative route adjacent to KOP #197 (residences in Hanna) already includes mitigation to reduce visual impacts, facilitated by closely paralleling an existing transmission line and limiting the scattering of vertical intrusions across more of the community's viewshed. Due to the low-growing vegetation and rolling terrain, there are limited selective mitigation measures that could further reduce impacts on views from Hanna other than rerouting the alternative route farther from the existing transmission line. However, such a reroute would increase contrast and impacts on other visual values including vistas to the north or south of Hanna.

There is an identified environmental justice population in the town of Hanna, Wyoming. However, no residences are located in the identified environmental justice Census Block located within 0.25 of the transmission line; therefore minimal visual and property values impacts are expected to this population. While there may be some impacts to vistas and scenery, it is not likely environmental justice populations will be disproportionately impacted by these impacts.

SI9g

The EIS contains mitigation measures designed to avoid, reduce, or minimize moderate or high impacts on a variety of resources. Per Appendix E of the Final EIS, the sequence of mitigation action for any resource impacts would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House CEQ (40 CFR 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation). Based on the analysis in the EIS, the BLM, in coordination with cooperating agencies, will make a determination if compensatory mitigation measures are necessary for any resource, and if so, will establish resource-specific guidelines for application and enforcement of these measures in the ROD. BLM intends to use a third-party CIC to monitor and enforce the requirements of the right-of-way grant. Compliance information prepared by the CIC is made available, as part of the public record by Project, for review.

Comment(s)

Response(s)

SI9 **Alliance for Historic Wyoming (cont.)**

SI9g these communities. Our experience working with citizen advocates around the state tells us that, too often, those advocates, especially when they are working in small communities such as Hanna, suffer from any number of obstacles when it comes to preserving their historic and cultural community fabric. Lack of financial resources is certainly high on the list. Thus, a funding stream for cumulative adverse impacts that would allow communities, nonprofits and other organizations to address individual issues affecting their ability to improve and strengthen their human environment would go a long way to bolstering Wyoming's cultural fabric. Such a fund could be administered by existing organizations such as the Wyoming Community Foundation, with grants available based on criteria established to ensure that the projects are consistent with the goals of improving the human environment that has been adversely impacted by these projects. If desired, establishing such criteria could be another task for the Cultural Resources Task Group handling the NHPA Section 106 mitigation discussions.

Again, let us reiterate our appreciation for the quality of the document you produced. Your thorough analysis allowed us to consider and emphasize larger concepts and often-overlooked issues in these comments. Hopefully, you will find this input valuable as all of us work towards protecting Wyoming's unique historic and cultural resources while facilitating our enduring and historic role as one of the nation's largest energy producing states.

Should you have any questions in regards to our comments, please feel free to contact me.

Sincerely,

Lesley Wischmann, Founding Board Member

Alliance for Historic Wyoming

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P6

Corporations

Comment(s)

Response(s)

CP1

Anadarko Petroleum Corporation

From: **Hitt, Tammi** <Tammi.Hitt@anadarko.com>
Date: Fri, May 16, 2014 at 11:32 AM
Subject: Energy Gateway South Transmission Project DEIS Comments from Anadarko
To: "BLM_WY_GatewaySouth@blm.gov" <BLM_WY_GatewaySouth@blm.gov>

Good morning:

Anadarko Petroleum Corporation (Anadarko) values the opportunity to respond to the Feb. 21, 2014 Federal Register Notice of Availability for the Draft Environmental Impact Statement (DEIS) and potential Resource Management Plan amendments for the proposed Energy Gateway South Transmission Project (Project). Our comments are attached.

Please contact me if you have any questions.

Tammi Hitt
Senior Regulatory Analyst
Anadarko E&P Onshore LLC

1400 E. Lincoln * Gillette, WY 82716

Office 307-670-6032 * Cell 307-682-4502 * Fax 832-636-5949

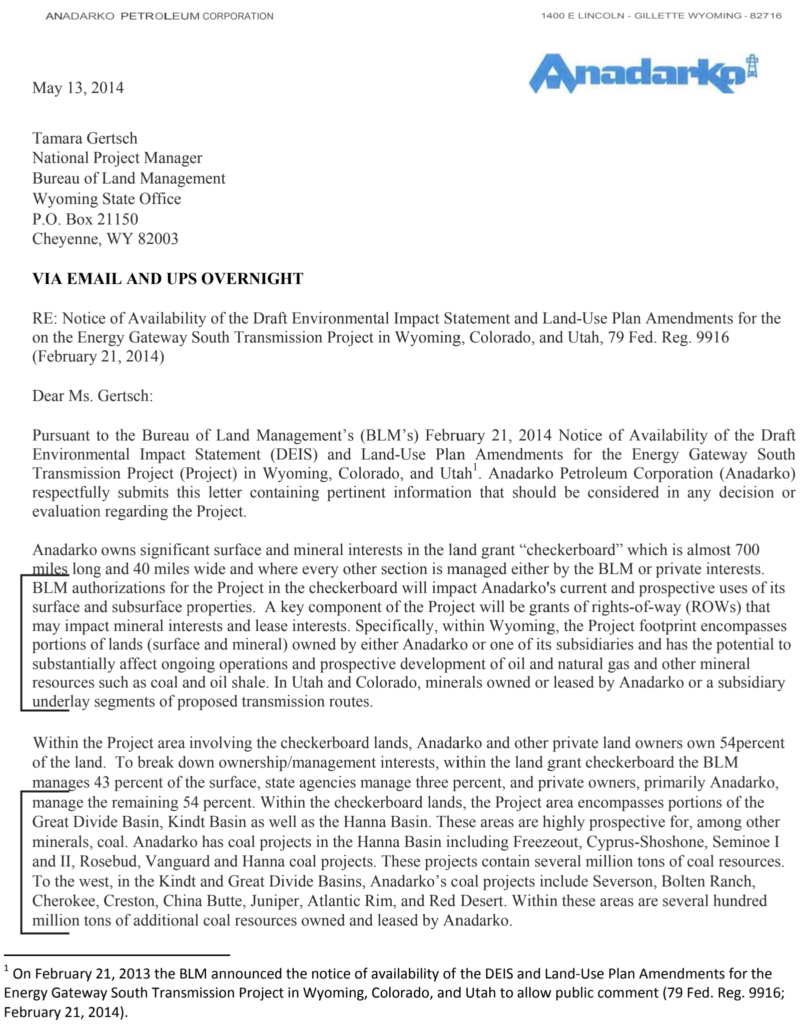
COLORADANS FOR
RESPONSIBLE
ENERGY DEVELOPMENT

www.cred.org

Comment(s)

Response(s)

CP1 **Anadarko Petroleum Corporation (cont.)**



ANADARKO PETROLEUM CORPORATION
1400 E LINCOLN - GILLETTE WYOMING - 82716

May 13, 2014

Tamara Gertsch
National Project Manager
Bureau of Land Management
Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

VIA EMAIL AND UPS OVERNIGHT

RE: Notice of Availability of the Draft Environmental Impact Statement and Land-Use Plan Amendments for the on the Energy Gateway South Transmission Project in Wyoming, Colorado, and Utah, 79 Fed. Reg. 9916 (February 21, 2014)

Dear Ms. Gertsch:

Pursuant to the Bureau of Land Management's (BLM's) February 21, 2014 Notice of Availability of the Draft Environmental Impact Statement (DEIS) and Land-Use Plan Amendments for the Energy Gateway South Transmission Project (Project) in Wyoming, Colorado, and Utah[1]. Anadarko Petroleum Corporation (Anadarko) respectfully submits this letter containing pertinent information that should be considered in any decision or evaluation regarding the Project.

CP1a

Anadarko owns significant surface and mineral interests in the land grant "checkerboard" which is almost 700 miles long and 40 miles wide and where every other section is managed either by the BLM or private interests. BLM authorizations for the Project in the checkerboard will impact Anadarko's current and prospective uses of its surface and subsurface properties. A key component of the Project will be grants of rights-of-way (ROWs) that may impact mineral interests and lease interests. Specifically, within Wyoming, the Project footprint encompasses portions of lands (surface and mineral) owned by either Anadarko or one of its subsidiaries and has the potential to substantially affect ongoing operations and prospective development of oil and natural gas and other mineral resources such as coal and oil shale. In Utah and Colorado, minerals owned or leased by Anadarko or a subsidiary underlay segments of proposed transmission routes.

CP1b

Within the Project area involving the checkerboard lands, Anadarko and other private land owners own 54percent of the land. To break down ownership/management interests, within the land grant checkerboard the BLM manages 43 percent of the surface, state agencies manage three percent, and private owners, primarily Anadarko, manage the remaining 54 percent. Within the checkerboard lands, the Project area encompasses portions of the Great Divide Basin, Kindt Basin as well as the Hanna Basin. These areas are highly prospective for, among other minerals, coal. Anadarko has coal projects in the Hanna Basin including Freezeout, Cyprus-Shoshone, Seminoe I and II, Rosebud, Vanguard and Hanna coal projects. These projects contain several million tons of coal resources. To the west, in the Kindt and Great Divide Basins, Anadarko's coal projects include Severson, Bolten Ranch, Cherokee, Creston, China Butte, Juniper, Atlantic Rim, and Red Desert. Within these areas are several hundred million tons of additional coal resources owned and leased by Anadarko.

---

[1] On February 21, 2013 the BLM announced the notice of availability of the DEIS and Land-Use Plan Amendments for the Energy Gateway South Transmission Project in Wyoming, Colorado, and Utah to allow public comment (79 Fed. Reg. 9916; February 21, 2014).

CP1a

The Bureau of Land Management (BLM) would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing that PacifiCorp, doing business as Rocky Mountain Power (Applicant), must acquire all access permissions for lands outside of their jurisdiction. It is expected that the Applicant would resolve conflicts with regard to mineral ownership and access along the selected route, including any compensation for economic impacts on leaseholders, etc., through fee mineral and landowner agreements and permissions. Also, it is the responsibility of the right-of-way grantee to conduct proper due diligence to ensure that legally valid mining claims are respected and agreements are made with claim owners. In general, BLM expects the likelihood and potential for such conflict are low and the effect small. With the availability of current technology, mining and oil and gas recovery still could occur in proximity to transmission lines. Discussion is included in Section 3.2.2.5 that acknowledges the potential for isolated conflicts with future mineral development, and notes the BLM's expectation that the Applicant would obtain permissions and agreements that resolve conflicts with regard to mineral ownership and access along the selected route prior to construction.

CP1b

In accordance with National Environmental Policy Act, the potential impacts of a federal action on a particular resource or resource use are analyzed and reported similarly for all jurisdictions.

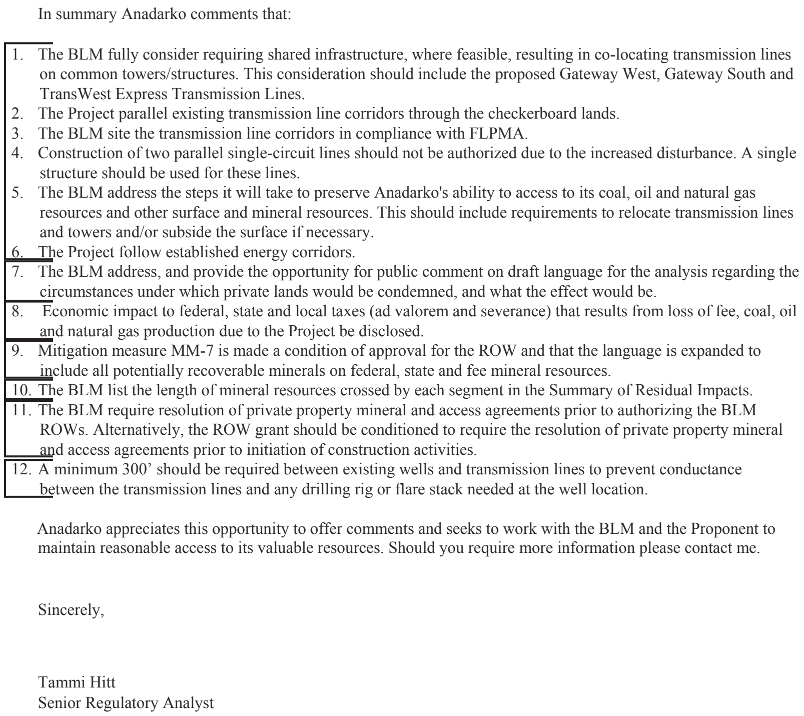
An assumption for analysis inherent in the approach to analysis of potential impacts on oil and gas and other mineral resources is that all leases are (or would become) producing wells. BLM believes a description of the types of mineral uses in the study corridors in the regional setting and affected environment sections is adequate to characterize the impacts without disclosing impacts by resource category.

CP1 **Anadarko Petroleum Corporation (cont.)**

	Comment(s)	Response(s)
CP1c	Anadarko comments that the BLM's ROWs or other authorizations should not occur prior to completion of fee mineral and surface owner access agreements as such action by the BLM would negatively impact private ownership interests on lands intertwined with the BLM managed lands. Because of this, all ROWs granted by the BLM should be subject to existing mineral and lease rights and conditioned that the transmission line will have to be relocated or the mineral interest owner paid fair market value of the minerals it cannot access due to placement of the line. Indeed, the BLM is required under the Federal Land Policy and Management Act of 1976 (FLPMA) to manage its lands for multi-use that preserves present and future interests for the most productive uses of the lands in a harmonious and coordinated manner. 43 U.S.C.A. § 1701 *et seq.*	See response to Comment CP1a and CP1b.
CP1d	Given past development trends and rapid advances in mining technologies, as evidenced by recent shale plays around the country, siting of the transmission line should not unreasonably limit or impact Anadarko's legal right to develop its minerals, especially coal, oil and natural gas. The BLM must consider the potential value of these mineral resources that could be lost or made inaccessible by the proposed Project. Transmission lines prohibit development of all coal or other minerals directly beneath their respective ROWs. Due to safety reasons, there could be no mining directly beneath the lands covered by the transmission lines and on those lands within a certain distance of the ROW, sterilizing even more mineral resources. Often, blasting activities are required to produce coal and other minerals. However, blasting would not be able to occur under or near the transmission lines further severing Anadarko's access to its coal resources. If the ROW cuts through the middle of a mine site, it may sever mine operations thus increasing mining costs. For underground mines, the Project would sterilize the coal directly beneath the towers as well as a distance laterally. Therefore, an un-mined column must be left in place that is larger than the actual footprint of the tower. If mining were to occur via longwall methods, mine operators would likely be unable to leave columns beneath towers. Additionally, due to the nature of longwall mining, the ground would likely experience subsidence. Given this, longwall mining, a sometimes more cost effective mining method, would be impossible in the vicinity of the Project. The BLM must fully take into consideration the economic loss the Project would have on the fee mineral holdings within the checkerboard given the likelihood that these holdings would be used for energy projects during the life of the Project.	See response to Comment CP1a
CP1e	The BLM must consider the economic costs to fee mineral and federal lease interest holders should the Project prohibit development of such minerals. To that end, additional information is needed regarding the economic impact resulting from the loss of opportunity to develop fee minerals caused by the Project. Selective Mitigation Measure 7 (MM-7), defined as "to span or avoid sensitive features", states that, "tower structures would be located so as to span active mines and producing oil, gas, or geothermal wells to limit conflicts with access to, or expansion of, these sites, where practicable" (DEIS 3-70). The DEIS acknowledges potential impacts including "loss of mineral resources caused by construction activities," and "limit[ation] and/or prevent[ion of] existing and/or future development and extraction of mineral resources resulting from the presence of permanent facilities" (DEIS 3-685). The DEIS further states, "In the event mineral extraction operations cannot be avoided during siting and final engineering, the Applicant will compensate lease holders. In an instance where the Project could not avoid a mineral extraction operation, a mineral entry would take precedence over other land uses. The granting of a utility right-of-way would not overrule the mineral owners' right to develop and extract minerals within the right-of-way identified."	See response to Comment CP1d.
CP1f	Anadarko requests MM-7 be made a condition of approval for the Project and furthermore, it should clearly state the compensation to leaseholders should apply to all potentially recoverable minerals on federal, state and fee mineral resources and not just current mine operators. Resolution of private property mineral and access agreements should also be completed prior to authorizing the BLM ROWs. Alternatively, the ROW grant should be conditioned to require the resolution of private property mineral and access agreements prior to initiation of construction activities. Anadarko also requests the length of each segment that crosses mineral resources be quantified in the Summary of Residual Impacts.	See response to Comment CP1d.

Comment(s)

CP1 | **Anadarko Petroleum Corporation (cont.)**



In summary Anadarko comments that:

CP1g
1. The BLM fully consider requiring shared infrastructure, where feasible, resulting in co-locating transmission lines on common towers/structures. This consideration should include the proposed Gateway West, Gateway South and TransWest Express Transmission Lines.
2. The Project parallel existing transmission line corridors through the checkerboard lands.
3. The BLM site the transmission line corridors in compliance with FLPMA.
4. Construction of two parallel single-circuit lines should not be authorized due to the increased disturbance. A single structure should be used for these lines.
5. The BLM address the steps it will take to preserve Anadarko's ability to access to its coal, oil and natural gas resources and other surface and mineral resources. This should include requirements to relocate transmission lines and towers and/or subside the surface if necessary.
6. The Project follow established energy corridors.

CP1h
7. The BLM address, and provide the opportunity for public comment on draft language for the analysis regarding the circumstances under which private lands would be condemned, and what the effect would be.

CP1i
8. Economic impact to federal, state and local taxes (ad valorem and severance) that results from loss of fee, coal, oil and natural gas production due to the Project be disclosed.

CP1j
9. Mitigation measure MM-7 is made a condition of approval for the ROW and that the language is expanded to include all potentially recoverable minerals on federal, state and fee mineral resources.

CP1k
10. The BLM list the length of mineral resources crossed by each segment in the Summary of Residual Impacts.

CP1l
11. The BLM require resolution of private property mineral and access agreements prior to authorizing the BLM ROWs. Alternatively, the ROW grant should be conditioned to require the resolution of private property mineral and access agreements prior to initiation of construction activities.

CP1m
12. A minimum 300' should be required between existing wells and transmission lines to prevent conductance between the transmission lines and any drilling rig or flare stack needed at the well location.

Anadarko appreciates this opportunity to offer comments and seeks to work with the BLM and the Proponent to maintain reasonable access to its valuable resources. Should you require more information please contact me.

Sincerely,

Tammi Hitt
Senior Regulatory Analyst

Response(s)

CP1g See responses to Comments CP1a through CP1f.

CP1h An additional section has been included in Section 3.2.22.5.2 (Impacts Common to All Alternatives) that will describe the impacts to private property. It will include the following discussion:

Short-term impacts on nearby residents and properties as a result of the Energy Gateway South Transmission Project (Project) would include short-term disruptions during construction. These would include increased noise from construction activities and equipment, the visual presence of construction equipment, and potential traffic and congestion resulting from construction trucks and equipment accessing the right-of-way, use of local roads, and potential short-term road closures during conductor stringing. Long-term impacts on nearby residents as a result of operation of the Project would include low, infrequent disturbance during any maintenance or repair activities (property values are discussed in the subsequent section).

New right-of-ways for the construction and maintenance of the new transmission line would be required for the Project. Existing access roads would be used where possible, but additional access road easements would also need to be acquired. The Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. The Applicant would also compensate landowners for any lost agricultural values.

The appraisals may reference studies conducted on similar properties to support their conclusions. The strength of any appraisal depends on the individual analysis of the property, using neighborhood-specific market data to determine market value. The easements required may encumber the right-of-way area with land-use limitations. Each transmission line easement will specify the present and future right to clear the right-of-way and to keep it clear of all trees, whether natural or cultivated, and all structure-supported crops, other structures, trees, brush, vegetation, fire and electrical hazards.

CP1i See response to Comment CP1e.

CP1j See response to Comment CP1a.

CP1k See next page for response to Comment CP1k.

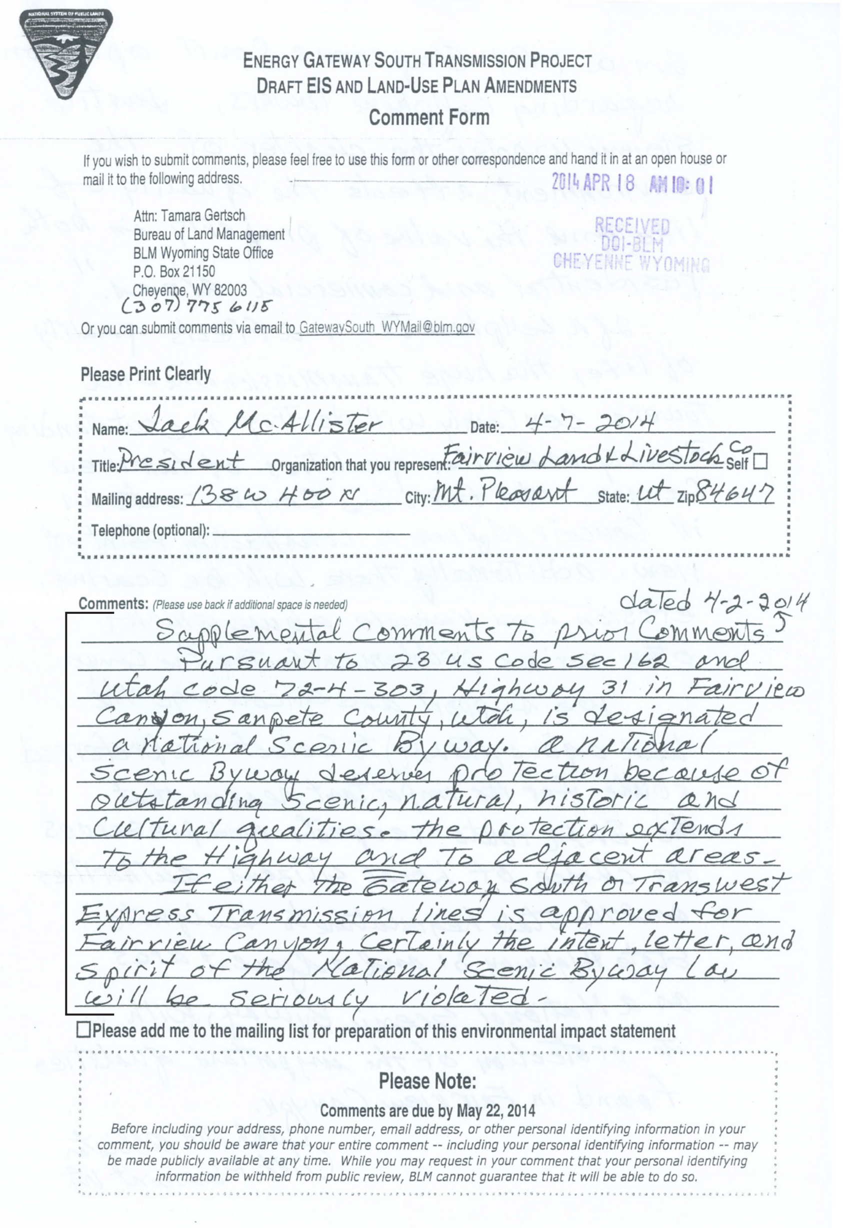
CP1l See next page for response to Comment CP1c.

CP1m See next page for response to Comment CP1m.

Comment(s)	Response(s)
CP1 **Anadarko Petroleum Corporation (cont.)**	
	CP1k This information is presented in Tables 3-30, 3-31, and 3-32, the alternative route comparisons of earth resources inventory and residual impacts. This information has also been included in Table S-3a in the Summary.
	CP1m The Applicant will study and take into account all alternating current (AC) interferences and coordinate and consult with affected existing infrastructure. Final transmission line design, construction, and mitigations will comply with all National Electrical Safety Code requirements.

Comment(s)

CP2 **Fairview Land and Livestock Company**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

2014 APR 18 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
(307) 775 6115

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Jack McAllister Date: 4-7-2014
Title: President Organization that you represent: Fairview Land & Livestock Co Self ☐
Mailing address: 138 W 400 N City: Mt. Pleasant State: UT Zip 84647
Telephone (optional):

Comments: (Please use back if additional space is needed)

dated 4-2-2014

CP2a

Supplemental Comments to prior Comments Pursuant to 23 US Code Sec 162 and Utah code 72-4-303, Highway 31 in Fairview Canyon, Sanpete County, Utah, is designated a National Scenic Byway. A National Scenic Byway deserves protection because of outstanding Scenic, Natural, historic and Cultural qualities. the protection extends to the Highway and to adjacent areas.

If either the Gateway South or Transwest Express Transmission lines is approved for Fairview Canyon, Certainly the intent, letter, and spirit of the National Scenic Byway Law will be seriously violated.

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

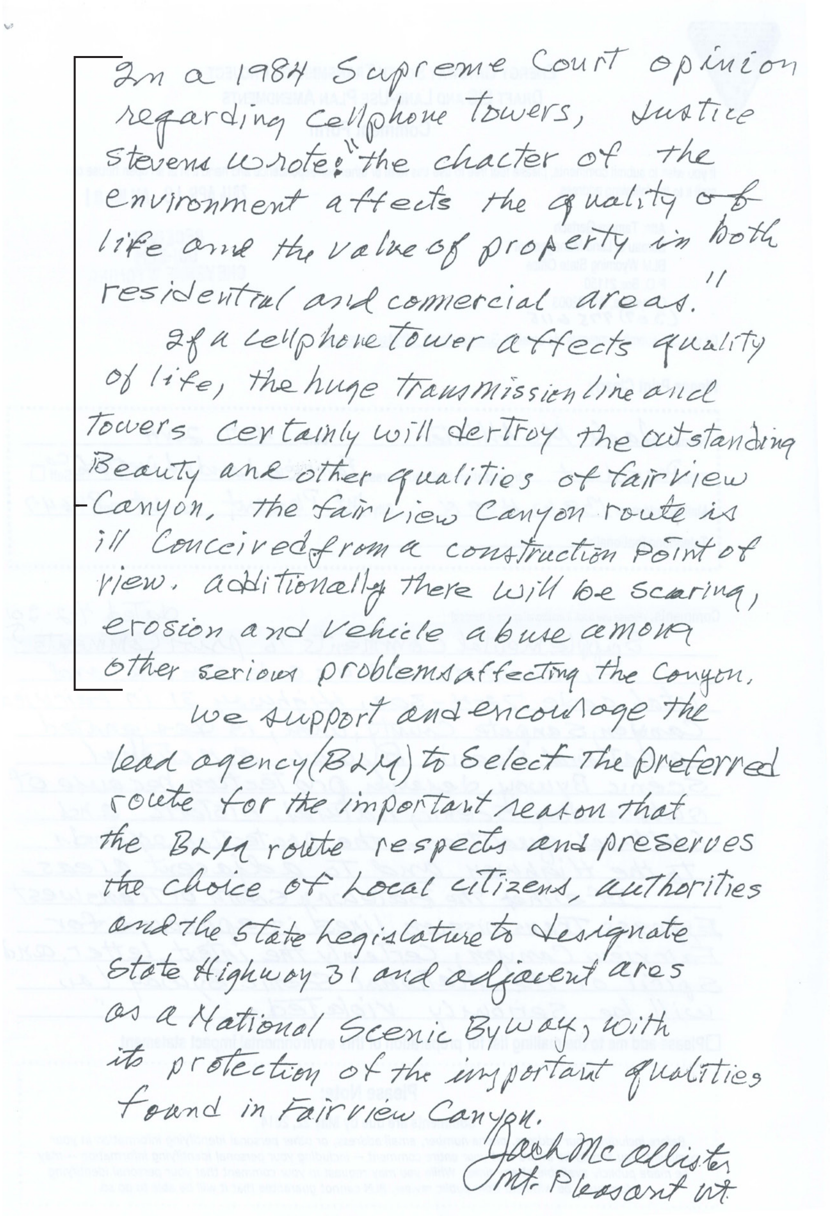
Response(s)

CP2a

Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

CP2 **Fairview Land and Livestock Company (cont.)**



CP2b

In a 1984 Supreme Court opinion regarding cellphone towers, Justice Stevens wrote: "the chacter of the environment affects the quality of life and the value of property in both residential and comercial areas."

If a cellphone tower affects quality of life, the huge transmission line and towers certainly will dertroy the outstanding Beauty and other qualities of fairview Canyon.

CP2c

The fairview Canyon route is ill conceived from a construction point of view. additionally there will be scaring, erosion and vehicle abuse among other serious problems affecting the Canyon.

We support and encourage the lead agency (BLM) to Select The preferred route for the important reason that the BLM route respects and preserves the choice of Local citizens, authorities and the State legislature to designate State Highway 31 and adjacent ares as a National Scenic Byway, with its protection of the important qualities found in Fairview Canyon.

Jack McAllister
Mt. Pleasant Ut.

Response(s)

CP2b

As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. There are 10 residences north of Fairview, Utah, located within 0.25 mile of Alternatives COUT BAX-E and COUT H, which are likely to be affected by the proximity of the transmission line.

Furthermore, all residences were included in the analysis of high concern views. In locations where the Project would dominate a natural setting, high impacts on those views were described in Section 3.2.18 and mapped on MV-21b in the Map Volume (MV) of the Final Environmental Impact Statement (EIS). Impacts on the natural character of Fairview Canyon are also discussed in Section 3.2.18 and mapped on MV-23b. Based on these impacts, and other resource effects, these alternative routes were not selected as the Agency Preferred Alternative.

CP2c

It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (all-terrain vehicles), which would be carried forward into the Plan of Development. The Applicant is committed to work with agencies and landowners, through development of the Plan of Development and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project. See also the response to Comment CP2a and CP2b.

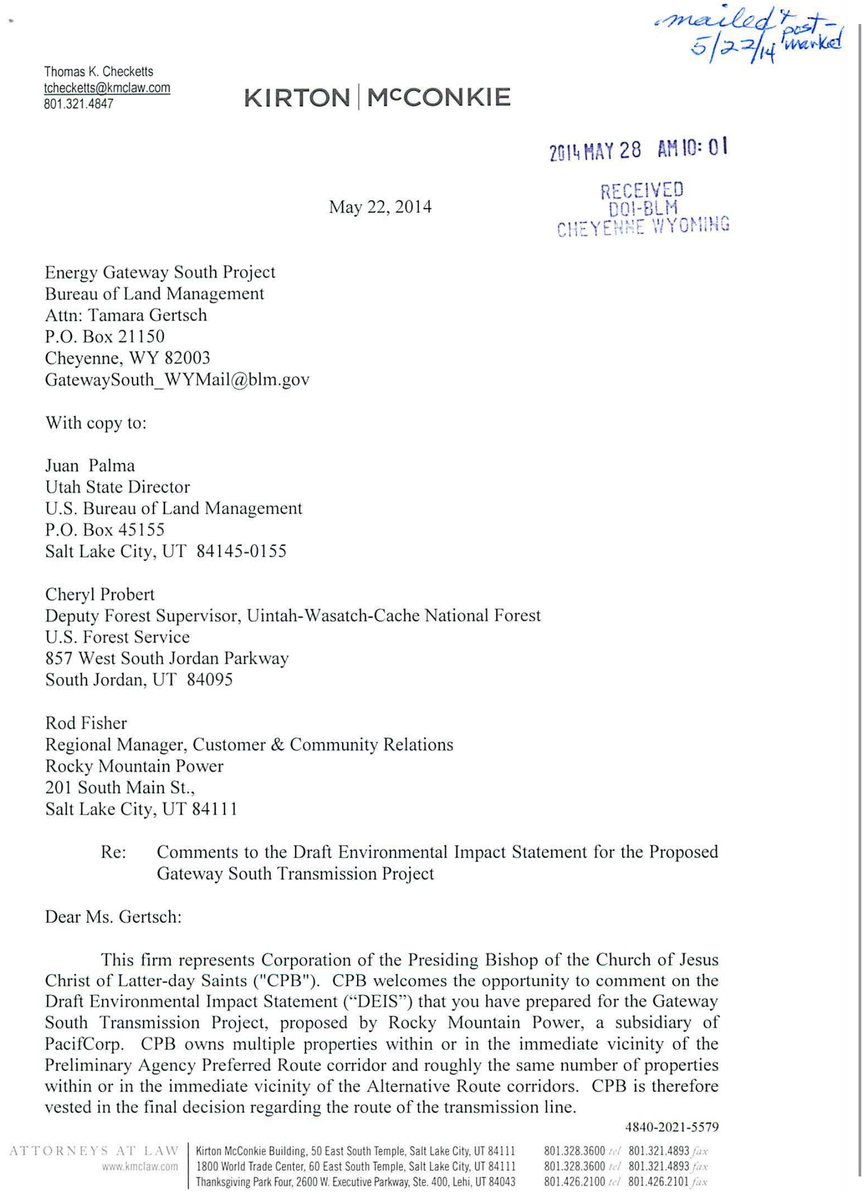
Comment(s)	Response(s)
CP3 **Hopcreek Hideway LLC**	
On Fri, Feb 28, 2014 at 10:23 AM, Andy Anderson <andyanderson@utah.gov> wrote:	
CP3a CP3b I have a camp ground located East of Nephi Utah in Salt Creek Canyon. I cannot support the location of the proposed route if it comes near my camp ground. I can not access your web site to verify the location. I would like you to send me a more detailed map of the area at MP 40 on SR 132. I am opposed to any lines on mt property.	CP3a Comment noted. The Project would avoid crossing the campground by passing to the north, approximately 350 feet from the campground. CP3b Comment noted. For a more detailed view of where the Project may cross your area of interest, the Applicant landowner parcel map can be accessed at http://gis.paragon-partners.com/FlexMaps/GWS_Website/. This map allows users to zoom into locations and see where Project alternative routes and route variations may cross the user's area of interest.
Thanks Andy Anderson Hopcreek Hideaway LLC.	

Comment(s)

Response(s)

CP4

Church of Jesus Christ of Latter-day Saints



mailed + post-marked 5/22/14

Thomas K. Checketts
tchecketts@kmclaw.com
801.321.4847

KIRTON | McCONKIE

2014 MAY 28 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

May 22, 2014

Energy Gateway South Project
Bureau of Land Management
Attn: Tamara Gertsch
P.O. Box 21150
Cheyenne, WY 82003
GatewaySouth_WYMail@blm.gov

With copy to:

Juan Palma
Utah State Director
U.S. Bureau of Land Management
P.O. Box 45155
Salt Lake City, UT 84145-0155

Cheryl Probert
Deputy Forest Supervisor, Uintah-Wasatch-Cache National Forest
U.S. Forest Service
857 West South Jordan Parkway
South Jordan, UT 84095

Rod Fisher
Regional Manager, Customer & Community Relations
Rocky Mountain Power
201 South Main St.,
Salt Lake City, UT 84111

Re: Comments to the Draft Environmental Impact Statement for the Proposed Gateway South Transmission Project

Dear Ms. Gertsch:

This firm represents Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints ("CPB"). CPB welcomes the opportunity to comment on the Draft Environmental Impact Statement ("DEIS") that you have prepared for the Gateway South Transmission Project, proposed by Rocky Mountain Power, a subsidiary of PacifCorp. CPB owns multiple properties within or in the immediate vicinity of the Preliminary Agency Preferred Route corridor and roughly the same number of properties within or in the immediate vicinity of the Alternative Route corridors. CPB is therefore vested in the final decision regarding the route of the transmission line.

4840-2021-5579

ATTORNEYS AT LAW
www.kmclaw.com
Kirton McConkie Building, 50 East South Temple, Salt Lake City, UT 84111 801.328.3600 *tel* 801.321.4893 *fax*
1800 World Trade Center, 60 East South Temple, Salt Lake City, UT 84111 801.328.3600 *tel* 801.321.4893 *fax*
Thanksgiving Park Four, 2600 W. Executive Parkway, Ste. 400, Lehi, UT 84043 801.426.2100 *tel* 801.426.2101 *fax*

Comment(s)

CP4 **Church of Jesus Christ of Latter-day Saints (cont.)**

Gateway South Transmission Project
Bureau of Land Management
May 22, 2014
Page 2

CPB values efforts to minimize impacts to the environment as much as is reasonably possible. Regarding the transmission line's location, CPB requests that the Final EIS reflect the following comments:

Recreational Camps, Duchesne County

CP4a

CPB is very concerned about the impacts of the Agency Preferred Route on its recreational camp properties in Southwestern Duchesne County. As shown on the attached Maps, the Agency Preferred Route would have a substantial impact on CPB owned lands.

CPB invests significant sums into its recreational properties to allow families and CPB groups to enjoy the beauty of nature. Most of these properties are mountainous, wooded areas that are ideal camping destinations for groups and individuals to use for recreational and spiritual purposes. These camps provide an escape from the manmade intrusion of our everyday lives. CPB therefore highly values the seclusion and pristine nature of these settings and desires to preserve their quality for the future. The pristine and natural setting of these camps fosters an appreciation for the Creator and contributes to the overall religious experience of the participants.

Camp Timberlane is a good example (see Maps 2 and 3). This is an existing camp that offers improvements and facilities for large groups of people. The Agency Preferred Route corridor bisects Camp Timberlane. The fact that the line may be located within the camp or very near to it is very concerning. A high voltage transmission line is starkly inconsistent with the purpose of a large camping complex frequented by large youth groups and families. Given the setting, the visual impact of the line would be jarring and would significantly degrade the value and purpose of the camp.

CP4b

Another good example is the Crescent Regional Recreation Camp (see Map 4). Like Camp Timberlane, this camp is improved with camping and recreational facilities (including a reservoir) for large youth and family groups. The current Agency Preferred Route runs across the northern boundary of this camp at a higher elevation overlooking the camp. Presumably the line will be highly visible from nearly anywhere in camp and very accessible to camp patrons. As noted above, the visual prominence of the transmission line would significantly degrade the experience of the campers and the value and purpose of the camp.

CP4c

Further, it is CPB's experience that when a new road is built even on private land, the public takes this as an invitation to use the private road to access nearby public and private lands. The road system that will accompany the new transmission line will inevitably lead to greater trespassing on CPB camping properties in the area. This will

4840-2021-5579

Response(s)

CP4a

To establish the resource database for analysis for the EIS, the EIS team gathered, compiled, and analyzed existing data provided by federal, state, and local agencies and other credible public sources of information. If data indicated the presence of a camp, the facility was avoided to the extent practicable and/or located in such a way that activities at the facility would not be affected (visually or physically). However, in some cases, data received did not indicate the presence of recreational uses, particularly on private land where specific uses may not be evident in the public data. Such is the case with Camp Timberlane and other camps administered by the Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints (CPB).

Regarding Camp Timberlane, when data were compiled, data received for the area indicated privately owned parcels and did not indicate existence of an organized recreational youth camp. Comments on the Draft EIS from the CPB informed the EIS team of the recreational use of the area. In response to this new information, representatives of the CPB, Applicant, and BLM met in April 2014 to discuss the CPB properties. Subsequently, the Applicant identified route variations in this area that would avoid Camp Timberlane while considering other existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

CP4b

Based on the proximity of the Project to recreation structures (i.e., cabins), high impacts were assigned in this area due to a largely natural setting found adjacent to Reservation Ridge. Recently the location of this camp has been brought to the attention of the Project and as such, impacts on these views have been described in Chapter 3 of the EIS. Also, see the response to Comment CP4a.

CP4c

See response to Comment CP4a.

Comment(s)

Response(s)

CP4 **Church of Jesus Christ of Latter-day Saints (cont.)**

Gateway South Transmission Project
Bureau of Land Management
May 22, 2014
Page 3

CP4c further degrade the quality and safety of CPB properties. It also raises significant safety concerns as these camps are often utilized as "Girl's Camps" where groups of young women between the ages of 12 and 18 come from local congregations to utilize the camps. Because the properties are remote, it will be difficult to police trespassers. Finally, trespassing by hunters that will be facilitated by the required roads presents real safety concerns for the camp patrons.

CP4d Additionally, and possibly most importantly, placing the transmission lines on the Agency Preferred Route will likely affect a greater number of people than nearly any other proposed route. During the summer months, the CPB recreational camps are occupied almost continuously by hundreds of people per day, with thousands of unique individuals using the camps in a single summer. The users of this property are primarily outdoors so the presence of a large transmission line will be even more strongly felt than for other recreational properties or even residential areas. Even though the camps are primarily used during the summer months, these properties are likely the most heavily used properties within a many mile radius.

For these reasons CPB opposes the Preliminary Agency Preferred Route and requests that you utilize one of the Alternate Routes, preferably the northernmost route that runs from Dinosaur, Colorado, through Roosevelt, Utah, and rejoins the Preferred Route southeast of Spanish Fork, Utah ("Northern Route"). If the Agency does decide to use the current Preliminary Agency Preferred Route, CPB requests that the Agency micro-site within the Agency Preferred Route corridor in a way that circumvents the CPB recreational camps. CPB feels that placing the transmission lines on the current Agency Preferred Route, and thereby negatively affecting thousands of people seeking to experience unspoiled wilderness, would not be in harmony with the Agency's stated purpose in the Summary of the DEIS "*to minimize damage to scenic and esthetic values* and fish and wildlife habitat and otherwise protect the environment *through avoidance or mitigation*." CP4e CPB sees no reason to incur such a detrimental impact to its and other people's private properties in a green field area when an established transmission corridor already exists in the Northern Route and can readily accept the Gateway South Project with significantly less disturbance and impacts to the pristine lands that would be affected by the Agency Preferred Route. While perhaps not true in all cases, the vast majority of the private lands impacted by the Northern Route are agricultural or industrial in nature. In contrast, the vast majority of the lands impacted by the Agency Preferred Route are, like CPB's affected camping properties, recreational in nature and have very high greenfield, scenic, natural and retreat value. This value is much more easily degraded by the presence of a high voltage transmission line than that of agricultural or industrial property.

4840-2021-5579

CP4d See response to Comment CP4a.

CP4e See response to Comment CP4a.

Comment(s)

Response(s)

CP4 . **Church of Jesus Christ of Latter-day Saints (cont.)**

Gateway South Transmission Project
Bureau of Land Management
May 22, 2014
Page 4

The routing adjustments requested in this letter best balance the impacts on Utah's resources and on CPB's affected properties in particular. CPB appreciates your hard work and efforts to prepare the DEIS and looks forward to a final decision on the routing of the line. Please ensure that I am added to the official mailing list for this project.

Sincerely,

KIRTON McCONKIE

Thomas K. Checketts

Encls.

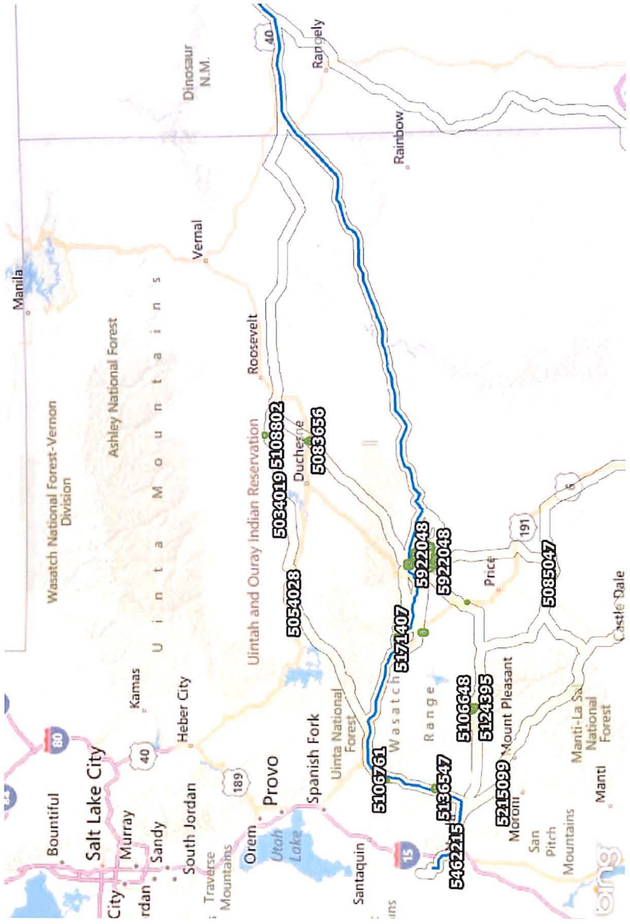
4840-2021-5579

Comment(s)

Response(s)

CP4 | **Church of Jesus Christ of Latter-day Saints (cont.)**

MAP 1



4840-2021-5579

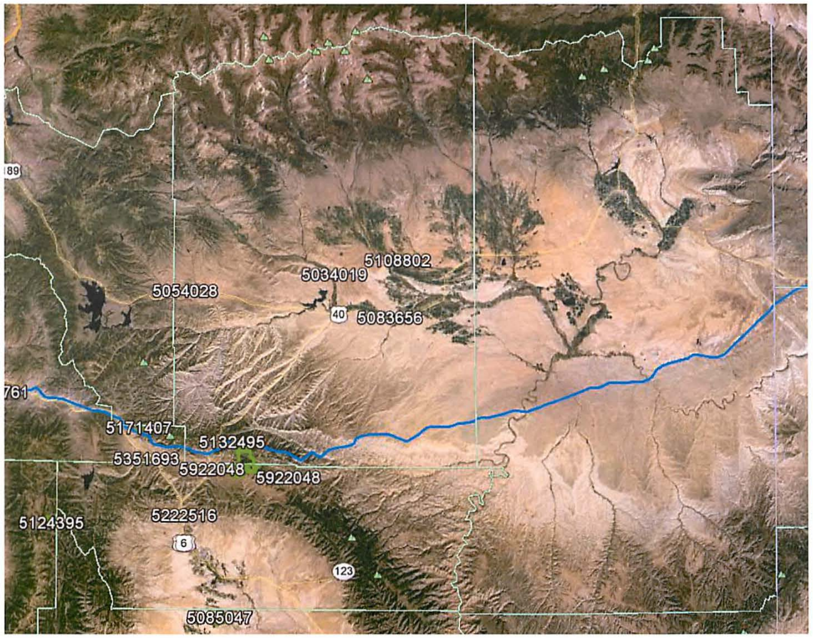
Comment(s)

Response(s)

CP4 | **Church of Jesus Christ of Latter-day Saints (cont.)**

MAP 2

Camp Timberlane
(Property No. 513-2495)



Comment(s)

Response(s)

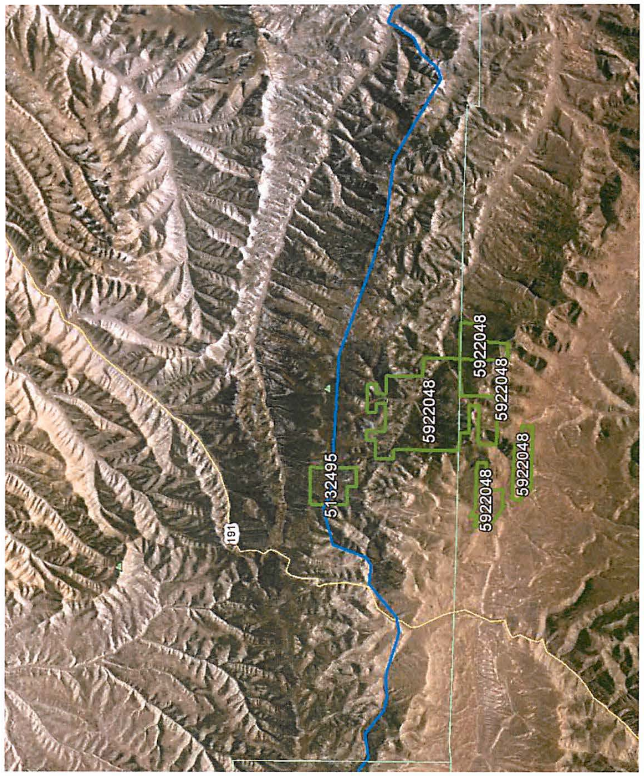
CP4 **Church of Jesus Christ of Latter-day Saints (cont.)**

4840-2021-5579

MAP 3

Camp Timberlane

(Property No. 513-2495)



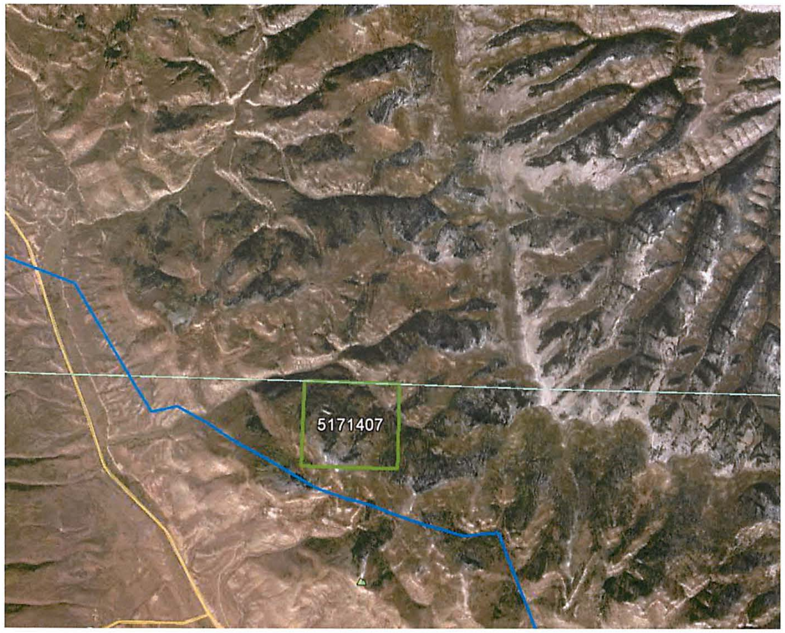
Comment(s)

Response(s)

CP4 **Church of Jesus Christ of Latter-day Saints (cont.)**

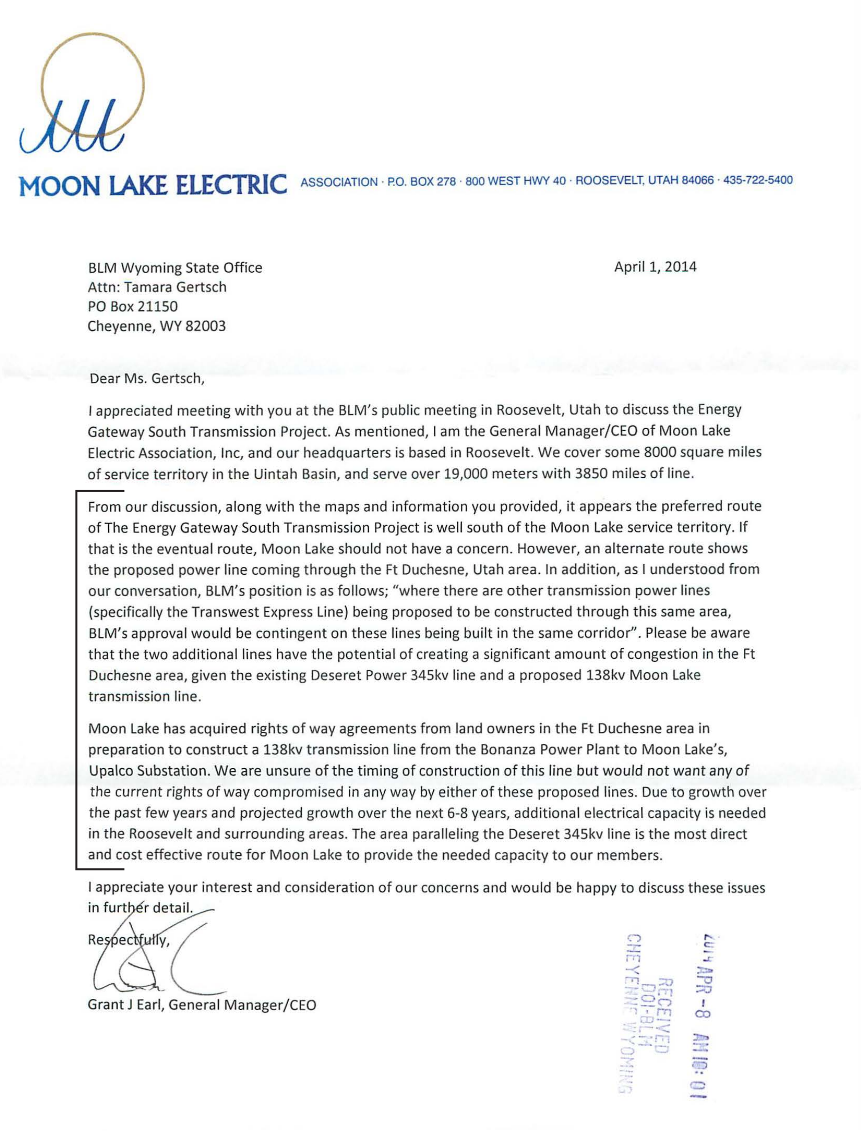
MAP 4

Crescent Regional Recreational Camp
(Property No. 517-1407)



Comment(s)

CP5 **Moon Lake Electric Association**



MOON LAKE ELECTRIC ASSOCIATION · P.O. BOX 278 · 800 WEST HWY 40 · ROOSEVELT, UTAH 84066 · 435-722-5400

BLM Wyoming State Office
Attn: Tamara Gertsch
PO Box 21150
Cheyenne, WY 82003

April 1, 2014

Dear Ms. Gertsch,

I appreciated meeting with you at the BLM's public meeting in Roosevelt, Utah to discuss the Energy Gateway South Transmission Project. As mentioned, I am the General Manager/CEO of Moon Lake Electric Association, Inc, and our headquarters is based in Roosevelt. We cover some 8000 square miles of service territory in the Uintah Basin, and serve over 19,000 meters with 3850 miles of line.

CP5a

From our discussion, along with the maps and information you provided, it appears the preferred route of The Energy Gateway South Transmission Project is well south of the Moon Lake service territory. If that is the eventual route, Moon Lake should not have a concern. However, an alternate route shows the proposed power line coming through the Ft Duchesne, Utah area. In addition, as I understood from our conversation, BLM's position is as follows; "where there are other transmission power lines (specifically the Transwest Express Line) being proposed to be constructed through this same area, BLM's approval would be contingent on these lines being built in the same corridor". Please be aware that the two additional lines have the potential of creating a significant amount of congestion in the Ft Duchesne area, given the existing Deseret Power 345kv line and a proposed 138kv Moon Lake transmission line.

Moon Lake has acquired rights of way agreements from land owners in the Ft Duchesne area in preparation to construct a 138kv transmission line from the Bonanza Power Plant to Moon Lake's, Upalco Substation. We are unsure of the timing of construction of this line but would not want any of the current rights of way compromised in any way by either of these proposed lines. Due to growth over the past few years and projected growth over the next 6-8 years, additional electrical capacity is needed in the Roosevelt and surrounding areas. The area paralleling the Deseret 345kv line is the most direct and cost effective route for Moon Lake to provide the needed capacity to our members.

I appreciate your interest and consideration of our concerns and would be happy to discuss these issues in further detail.

Respectfully,

Grant J Earl, General Manager/CEO

2014 APR -8 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

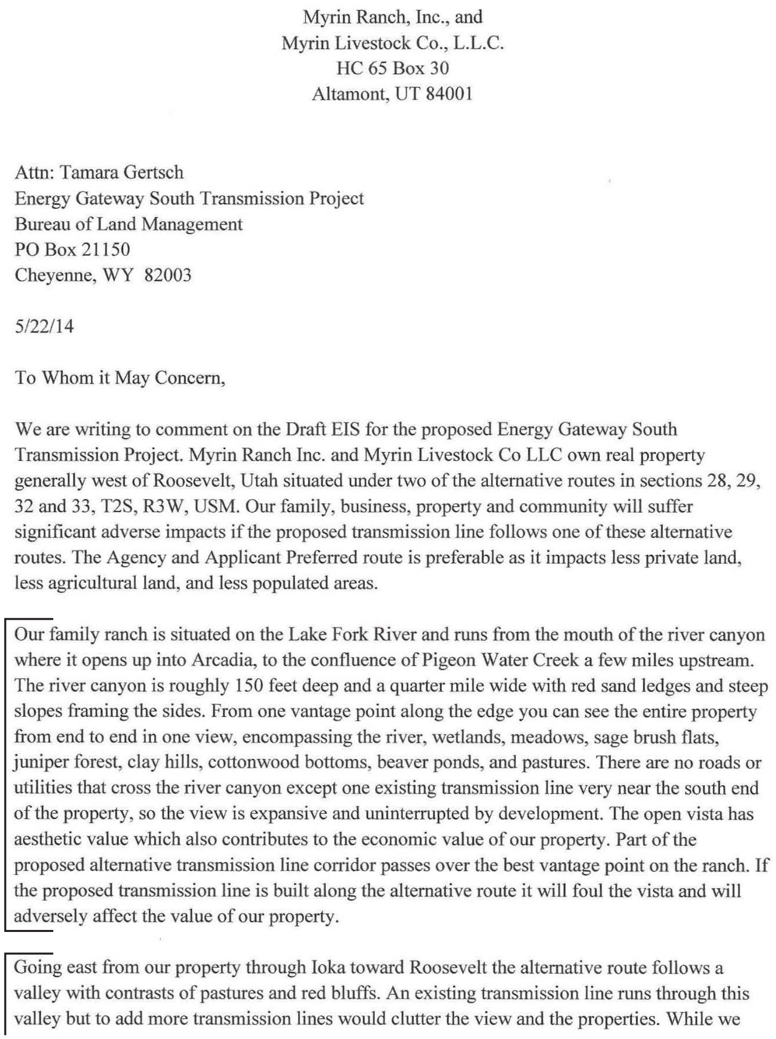
Response(s)

CP5a

The BLM received data for a portion of the proposed 138-kilovolt transmission line from the Moon Lake right-of-way department. Data for the entire proposed transmission line were not available. The data for the portion of the planned transmission line received was included in the analysis of impacts on future land use presented in Section 3.2.11 and as a reasonably foreseeable future action in the analysis of cumulative effects presented in Chapter 4.

Comment(s)

CP6 **Myrin Ranch, Inc.**



Myrin Ranch, Inc., and
Myrin Livestock Co., L.L.C.
HC 65 Box 30
Altamont, UT 84001

Attn: Tamara Gertsch
Energy Gateway South Transmission Project
Bureau of Land Management
PO Box 21150
Cheyenne, WY 82003

5/22/14

To Whom it May Concern,

We are writing to comment on the Draft EIS for the proposed Energy Gateway South Transmission Project. Myrin Ranch Inc. and Myrin Livestock Co LLC own real property generally west of Roosevelt, Utah situated under two of the alternative routes in sections 28, 29, 32 and 33, T2S, R3W, USM. Our family, business, property and community will suffer significant adverse impacts if the proposed transmission line follows one of these alternative routes. The Agency and Applicant Preferred route is preferable as it impacts less private land, less agricultural land, and less populated areas.

CP6a

Our family ranch is situated on the Lake Fork River and runs from the mouth of the river canyon where it opens up into Arcadia, to the confluence of Pigeon Water Creek a few miles upstream. The river canyon is roughly 150 feet deep and a quarter mile wide with red sand ledges and steep slopes framing the sides. From one vantage point along the edge you can see the entire property from end to end in one view, encompassing the river, wetlands, meadows, sage brush flats, juniper forest, clay hills, cottonwood bottoms, beaver ponds, and pastures. There are no roads or utilities that cross the river canyon except one existing transmission line very near the south end of the property, so the view is expansive and uninterrupted by development. The open vista has aesthetic value which also contributes to the economic value of our property. Part of the proposed alternative transmission line corridor passes over the best vantage point on the ranch. If the proposed transmission line is built along the alternative route it will foul the vista and will adversely affect the value of our property.

CP6b

Going east from our property through Ioka toward Roosevelt the alternative route follows a valley with contrasts of pastures and red bluffs. An existing transmission line runs through this valley but to add more transmission lines would clutter the view and the properties. While we

Response(s)

CP6a

As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Based on the comment, the value of this property would be adversely affected by the siting of the transmission line.

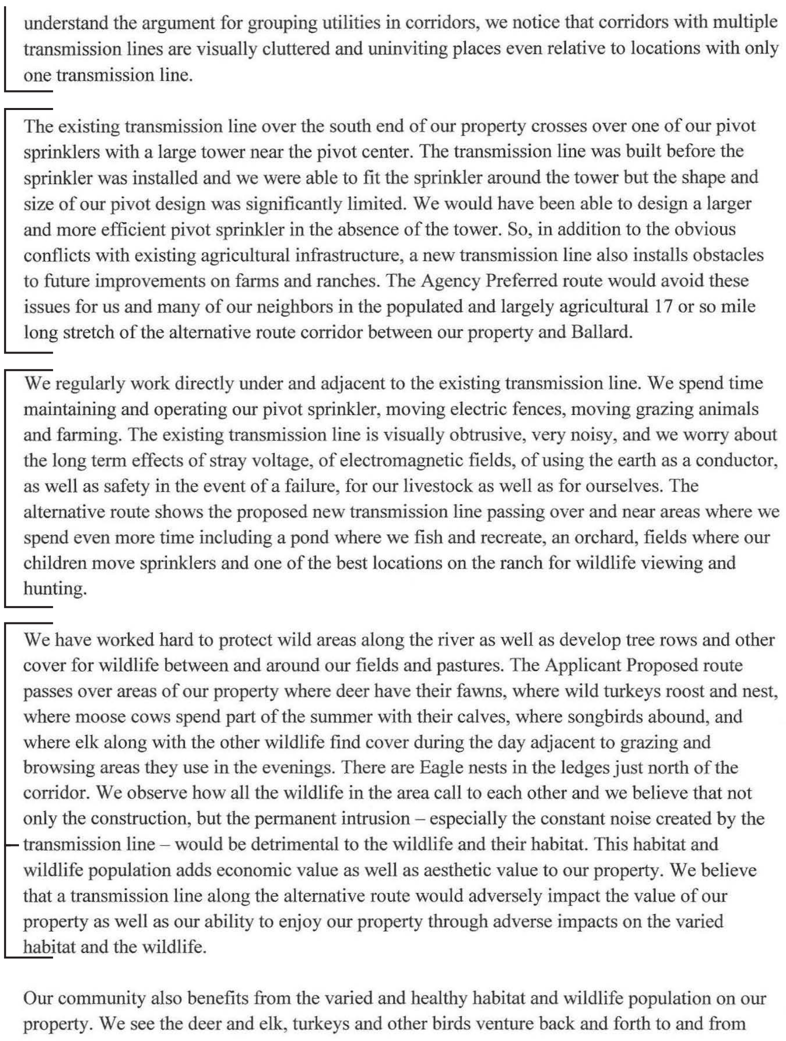
Furthermore, all residences were included in the analysis of high concern views. In locations where the Project would dominate a natural setting, high impacts on those views were described in Section 3.2.18 and mapped on MV-21b in the Map Volume of the Final EIS. Impacts on the natural character of the region are also discussed in Section 3.2.18 and mapped on MV-23b. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative or the Applicant's Preferred Alternative.

CP6b

Due to the large number of residences in this area, and across the Uinta Basin, high impacts were assessed on these views even with the presence of the existing transmission line. These impacts, and other resource effects, led to this alternative route not being selected as the Agency Preferred Alternative. Design techniques to reduce visual clutter associated with adding a second transmission line could include reducing the distance between the Project and the existing line. Additionally by placing the towers at the same intervals, the clutter from the two lines would be reduced through maximizing the distance between structures instead of staggering the towers that creates a wall-like effect.

Comment(s)

CP6 **Myrin Ranch, Inc. (cont.)**



CP6b understand the argument for grouping utilities in corridors, we notice that corridors with multiple transmission lines are visually cluttered and uninviting places even relative to locations with only one transmission line.

CP6c The existing transmission line over the south end of our property crosses over one of our pivot sprinklers with a large tower near the pivot center. The transmission line was built before the sprinkler was installed and we were able to fit the sprinkler around the tower but the shape and size of our pivot design was significantly limited. We would have been able to design a larger and more efficient pivot sprinkler in the absence of the tower. So, in addition to the obvious conflicts with existing agricultural infrastructure, a new transmission line also installs obstacles to future improvements on farms and ranches. The Agency Preferred route would avoid these issues for us and many of our neighbors in the populated and largely agricultural 17 or so mile long stretch of the alternative route corridor between our property and Ballard.

CP6d We regularly work directly under and adjacent to the existing transmission line. We spend time maintaining and operating our pivot sprinkler, moving electric fences, moving grazing animals and farming. The existing transmission line is visually obtrusive, very noisy, and we worry about the long term effects of stray voltage, of electromagnetic fields, of using the earth as a conductor, as well as safety in the event of a failure, for our livestock as well as for ourselves. The alternative route shows the proposed new transmission line passing over and near areas where we spend even more time including a pond where we fish and recreate, an orchard, fields where our children move sprinklers and one of the best locations on the ranch for wildlife viewing and hunting.

CP6e We have worked hard to protect wild areas along the river as well as develop tree rows and other cover for wildlife between and around our fields and pastures. The Applicant Proposed route passes over areas of our property where deer have their fawns, where wild turkeys roost and nest, where moose cows spend part of the summer with their calves, where songbirds abound, and where elk along with the other wildlife find cover during the day adjacent to grazing and browsing areas they use in the evenings. There are Eagle nests in the ledges just north of the corridor. We observe how all the wildlife in the area call to each other and we believe that not only the construction, but the permanent intrusion – especially the constant noise created by the transmission line – would be detrimental to the wildlife and their habitat.

CP6f This habitat and wildlife population adds economic value as well as aesthetic value to our property. We believe that a transmission line along the alternative route would adversely impact the value of our property as well as our ability to enjoy our property through adverse impacts on the varied habitat and the wildlife.

Our community also benefits from the varied and healthy habitat and wildlife population on our property. We see the deer and elk, turkeys and other birds venture back and forth to and from

Response(s)

CP6c Comment noted. Should this alternative route be selected, a number of design features of the Proposed Action for environmental protection (Design Features 20, 22, 23, 26, and 27) and selective mitigation measures (Selected Mitigation Measures 1 and 11) have been identified for implementation to reduce potential impacts on agricultural irrigation systems. Information discussing these design features and selective mitigation measures is presented in Chapter 2 and Section 3.2.11.4.2. In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

The BLM is responsible for determining whether or not to issue a right-of-way grant on the land it administers and, if so, under what terms and conditions. The BLM has no authority on lands outside of its jurisdiction and is not responsible for enforcing state takings law. If a right-of-way is granted, the Applicant would negotiate individual rights-of-way on private land crossed by the selected route directly with the landowners. The Applicant would work closely with private landowners to micro-site the transmission line, determine valuation, and secure easements consistent with applicable law.

CP6d See next page for response to CP6d.

CP6e Comment and route preference noted.

CP6f Comment and route preference noted.

Comment(s)

Response(s)

CP6 **Myrin Ranch, Inc. (cont.)**

CP6d

A number of design features and selective mitigation measures have been identified to reduce potential impacts on agricultural irrigation systems. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measure 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

The Applicant will negotiate individual rights-of-way on private land directly with the landowners. The Applicant works closely with private landowners to microsite the transmission line, determine valuation, and secure easements, consistent with applicable law. In the event agricultural operations cannot be avoided during siting and final engineering, compensation would be negotiated between the Applicant and the landowners and/or lessee.

Potential impacts to visual resources and scenery are discussed in Chapter 3, Section 3.2.18 of the Final EIS.

The Applicant is aware of concerns regarding possible health risks from electromagnetic fields (EMF); however no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the World Health Organization and the International Commission for Non-Ionizing Radiation Protection, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23 of the Final EIS.

Comment(s)

Response(s)

CP6 **Myrin Ranch, Inc. (cont.)**

neighboring properties and the surrounding area while using the river bottom as refuge. The area of our ranch under the alternative route corridor is a uniquely quiet, isolated and undeveloped area where wildlife can get away from highways, houses, oil wells and noise.

CP6g We also own property in Ioka and Arcadia which falls in another alternative route corridor. This route raises similar concerns about adverse impacts to us and our community.

We believe adverse impacts to property, property values, agricultural operations, habitat, the local environment, wildlife, scenic vistas and health and safety of community would be far greater in the alternative route corridor than in the Agency Preferred corridor. We urge that the project be located in the Agency Preferred route corridor.

Sincerely,

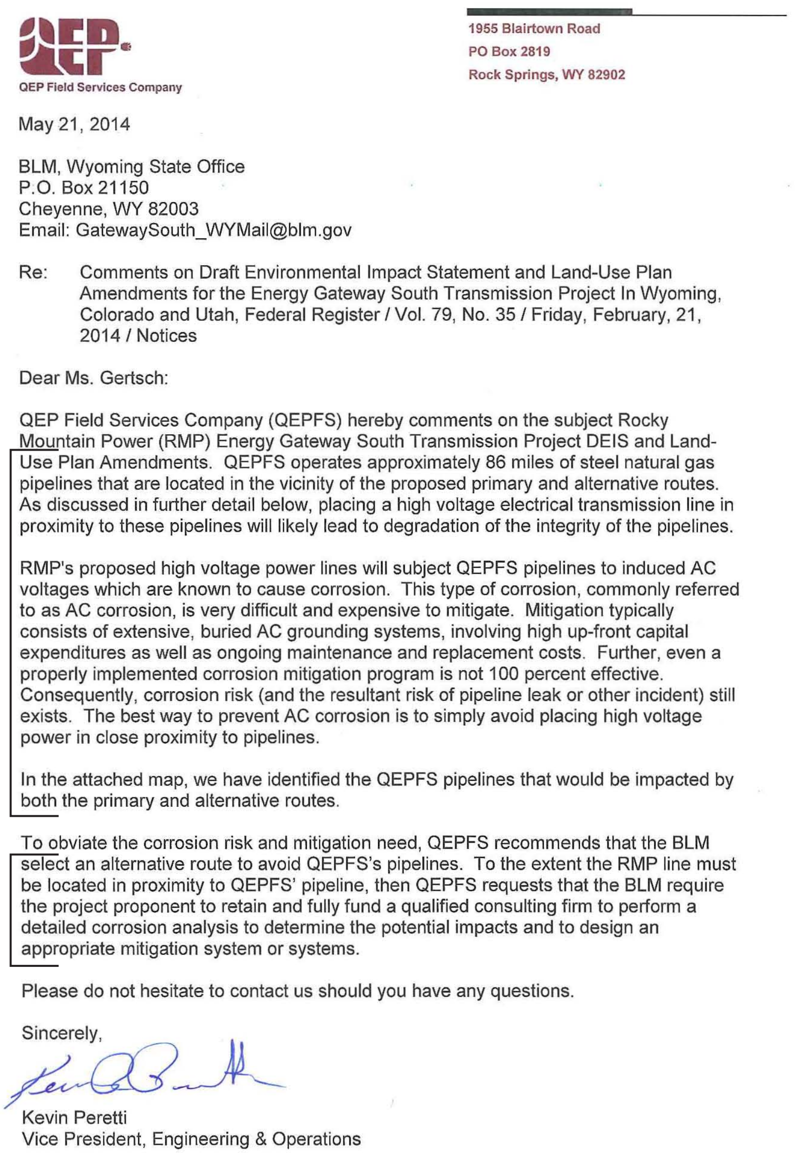
Alarik F. Myrin
Myrin Ranch, Inc.
Myrin Livestock Co., L.L.C.

CP6g Comment and route preference noted.

Comment(s)

Response(s)

CP7 **QEP Field Services Company**



QEP Field Services Company

1955 Blairtown Road
PO Box 2819
Rock Springs, WY 82902

May 21, 2014

BLM, Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
Email: GatewaySouth_WYMail@blm.gov

Re: Comments on Draft Environmental Impact Statement and Land-Use Plan Amendments for the Energy Gateway South Transmission Project In Wyoming, Colorado and Utah, Federal Register / Vol. 79, No. 35 / Friday, February, 21, 2014 / Notices

Dear Ms. Gertsch:

CP7a

QEP Field Services Company (QEPFS) hereby comments on the subject Rocky Mountain Power (RMP) Energy Gateway South Transmission Project DEIS and Land-Use Plan Amendments. QEPFS operates approximately 86 miles of steel natural gas pipelines that are located in the vicinity of the proposed primary and alternative routes. As discussed in further detail below, placing a high voltage electrical transmission line in proximity to these pipelines will likely lead to degradation of the integrity of the pipelines.

RMP's proposed high voltage power lines will subject QEPFS pipelines to induced AC voltages which are known to cause corrosion. This type of corrosion, commonly referred to as AC corrosion, is very difficult and expensive to mitigate. Mitigation typically consists of extensive, buried AC grounding systems, involving high up-front capital expenditures as well as ongoing maintenance and replacement costs. Further, even a properly implemented corrosion mitigation program is not 100 percent effective. Consequently, corrosion risk (and the resultant risk of pipeline leak or other incident) still exists. The best way to prevent AC corrosion is to simply avoid placing high voltage power in close proximity to pipelines.

In the attached map, we have identified the QEPFS pipelines that would be impacted by both the primary and alternative routes.

CP7b

To obviate the corrosion risk and mitigation need, QEPFS recommends that the BLM select an alternative route to avoid QEPFS's pipelines. To the extent the RMP line must be located in proximity to QEPFS' pipeline, then QEPFS requests that the BLM require the project proponent to retain and fully fund a qualified consulting firm to perform a detailed corrosion analysis to determine the potential impacts and to design an appropriate mitigation system or systems.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Kevin Peretti
Vice President, Engineering & Operations

CP7a

The agencies do not have the technical expertise to assess impacts on pipeline integrity. Also, the decision-maker would not base a decision on the outcome of such an issue. The BLM believes the technical nature of the issue places the issue between the Applicant and any pipeline company with facilities that may be crossed by the selected route.

Additional information from the Applicant regarding preconstruction activities related to coordination with pipeline companies whose facilities may be crossed by the selected route, if applicable, has been included in Section 2.3.1.8 of the Final EIS.

CP7b

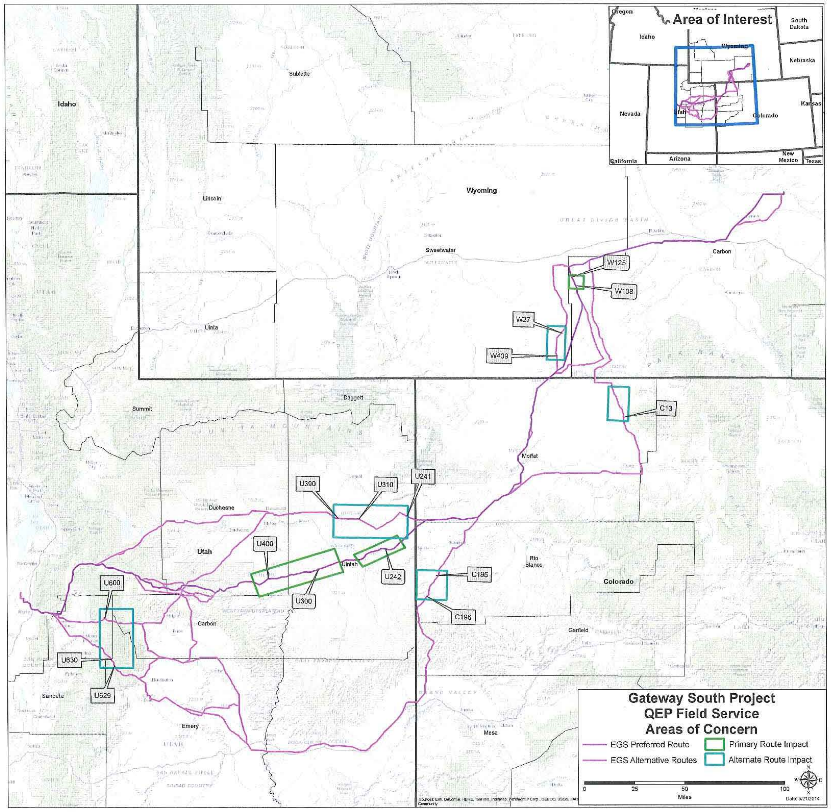
See response to Comment CP7a.

Comment(s)

Response(s)

CP7

QEP Field Services Company (cont.)

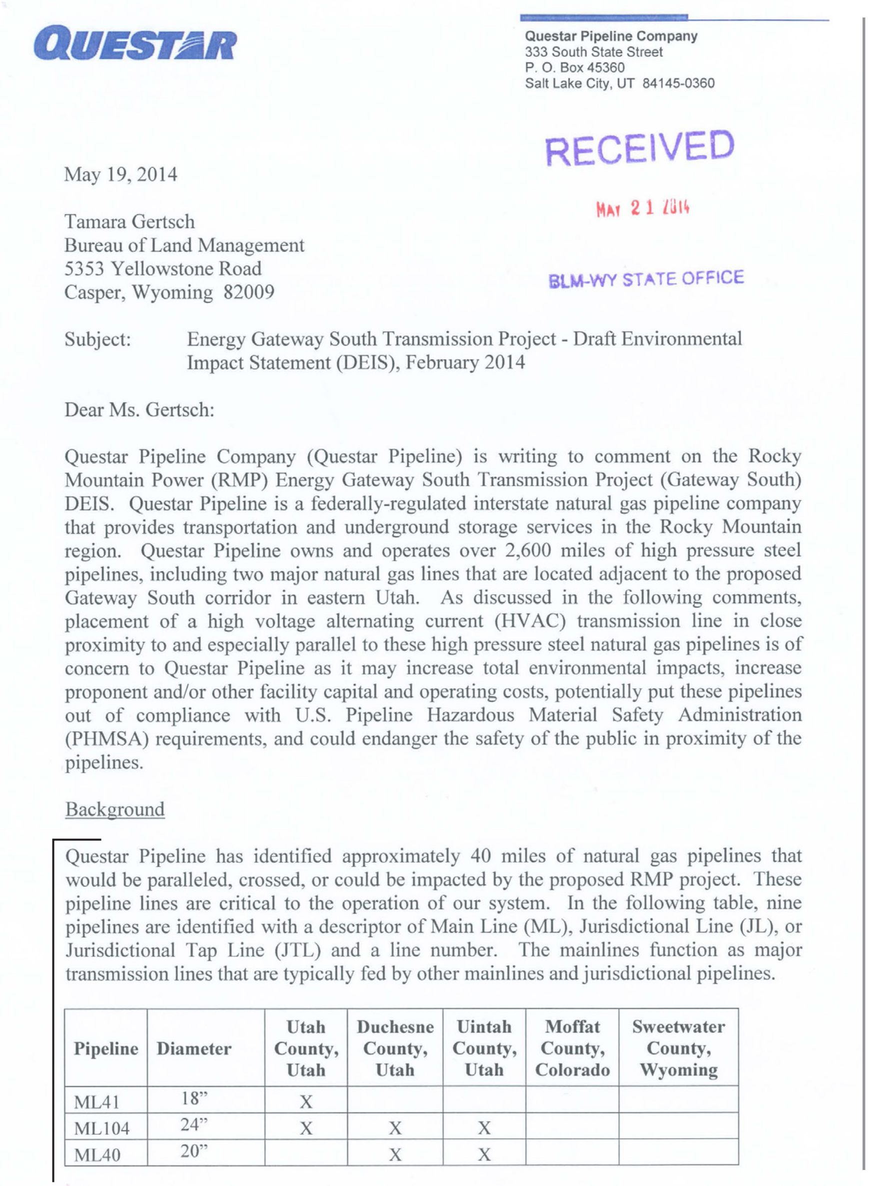


Comment(s)

Response(s)

CP8

Questar Pipeline Company



QUESTAR

Questar Pipeline Company
333 South State Street
P. O. Box 45360
Salt Lake City, UT 84145-0360

RECEIVED
MAY 21 2014
BLM-WY STATE OFFICE

May 19, 2014

Tamara Gertsch
Bureau of Land Management
5353 Yellowstone Road
Casper, Wyoming 82009

Subject: Energy Gateway South Transmission Project - Draft Environmental Impact Statement (DEIS), February 2014

Dear Ms. Gertsch:

Questar Pipeline Company (Questar Pipeline) is writing to comment on the Rocky Mountain Power (RMP) Energy Gateway South Transmission Project (Gateway South) DEIS. Questar Pipeline is a federally-regulated interstate natural gas pipeline company that provides transportation and underground storage services in the Rocky Mountain region. Questar Pipeline owns and operates over 2,600 miles of high pressure steel pipelines, including two major natural gas lines that are located adjacent to the proposed Gateway South corridor in eastern Utah. As discussed in the following comments, placement of a high voltage alternating current (HVAC) transmission line in close proximity to and especially parallel to these high pressure steel natural gas pipelines is of concern to Questar Pipeline as it may increase total environmental impacts, increase proponent and/or other facility capital and operating costs, potentially put these pipelines out of compliance with U.S. Pipeline Hazardous Material Safety Administration (PHMSA) requirements, and could endanger the safety of the public in proximity of the pipelines.

Background

CP8a

Questar Pipeline has identified approximately 40 miles of natural gas pipelines that would be paralleled, crossed, or could be impacted by the proposed RMP project. These pipeline lines are critical to the operation of our system. In the following table, nine pipelines are identified with a descriptor of Main Line (ML), Jurisdictional Line (JL), or Jurisdictional Tap Line (JTL) and a line number. The mainlines function as major transmission lines that are typically fed by other mainlines and jurisdictional pipelines.

Pipeline	Diameter	Utah County, Utah	Duchesne County, Utah	Uintah County, Utah	Moffat County, Colorado	Sweetwater County, Wyoming
ML41	18"	X				
ML104	24"	X	X	X		
ML40	20"		X	X		

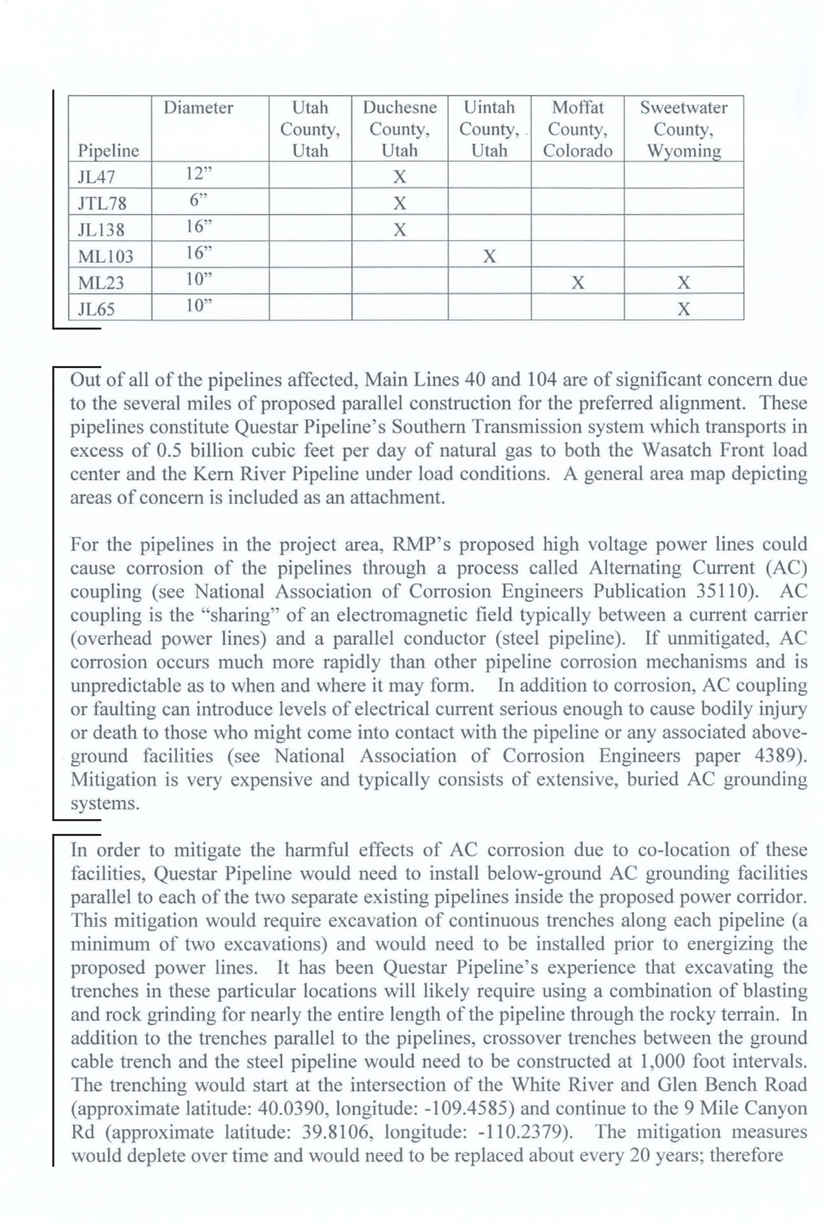
CP8a

This comment was forwarded to the Applicant as it is up to the Applicant to coordinate with pipeline company requests, including Questar. The Applicant responded to comments from Questar by preparing an alternative route revision (Alternative COUT-C) in the Uinta Basin (in the vicinity of the Green River) to address corrosion concerns raised by Questar Pipeline Association with siting the Project in proximity to their pipelines. The BLM Vernal Field Office reviewed the alternative route refinement and then incorporated the refinement into the analysis presented in the Final EIS.

Known pipeline facilities crossed by the alternative routes and route variations are displayed on the resource mapping in the Map Volume of the EIS. The BLM believes all pipelines are captured in the EIS analysis.

Comment(s)

CP8 Questar Pipeline Company (cont.)



CP8a

Pipeline	Diameter	Utah County, Utah	Duchesne County, Utah	Uintah County, Utah	Moffat County, Colorado	Sweetwater County, Wyoming
JL47	12”		X			
JTL78	6”		X			
JL138	16”		X			
ML103	16”			X		
ML23	10”				X	X
JL65	10”					X

CP8b

Out of all of the pipelines affected, Main Lines 40 and 104 are of significant concern due to the several miles of proposed parallel construction for the preferred alignment. These pipelines constitute Questar Pipeline's Southern Transmission system which transports in excess of 0.5 billion cubic feet per day of natural gas to both the Wasatch Front load center and the Kern River Pipeline under load conditions. A general area map depicting areas of concern is included as an attachment.

For the pipelines in the project area, RMP's proposed high voltage power lines could cause corrosion of the pipelines through a process called Alternating Current (AC) coupling (see National Association of Corrosion Engineers Publication 35110). AC coupling is the “sharing” of an electromagnetic field typically between a current carrier (overhead power lines) and a parallel conductor (steel pipeline). If unmitigated, AC corrosion occurs much more rapidly than other pipeline corrosion mechanisms and is unpredictable as to when and where it may form. In addition to corrosion, AC coupling or faulting can introduce levels of electrical current serious enough to cause bodily injury or death to those who might come into contact with the pipeline or any associated above-ground facilities (see National Association of Corrosion Engineers paper 4389). Mitigation is very expensive and typically consists of extensive, buried AC grounding systems.

CP8c

In order to mitigate the harmful effects of AC corrosion due to co-location of these facilities, Questar Pipeline would need to install below-ground AC grounding facilities parallel to each of the two separate existing pipelines inside the proposed power corridor. This mitigation would require excavation of continuous trenches along each pipeline (a minimum of two excavations) and would need to be installed prior to energizing the proposed power lines. It has been Questar Pipeline's experience that excavating the trenches in these particular locations will likely require using a combination of blasting and rock grinding for nearly the entire length of the pipeline through the rocky terrain. In addition to the trenches parallel to the pipelines, crossover trenches between the ground cable trench and the steel pipeline would need to be constructed at 1,000 foot intervals. The trenching would start at the intersection of the White River and Glen Bench Road (approximate latitude: 40.0390, longitude: -109.4585) and continue to the 9 Mile Canyon Rd (approximate latitude: 39.8106, longitude: -110.2379). The mitigation measures would deplete over time and would need to be replaced about every 20 years; therefore

Response(s)

CP8b

The agencies do not have the technical expertise to assess impacts on pipeline integrity. Also, the decision-makers for rights-of-way across federal lands would not base a decision on the outcome of such issue. BLM believes the technical nature of the issue places the issue between the Applicant and any pipeline company with facilities that may be crossed by the selected route. See also response to Comment CP8a.

CP8c

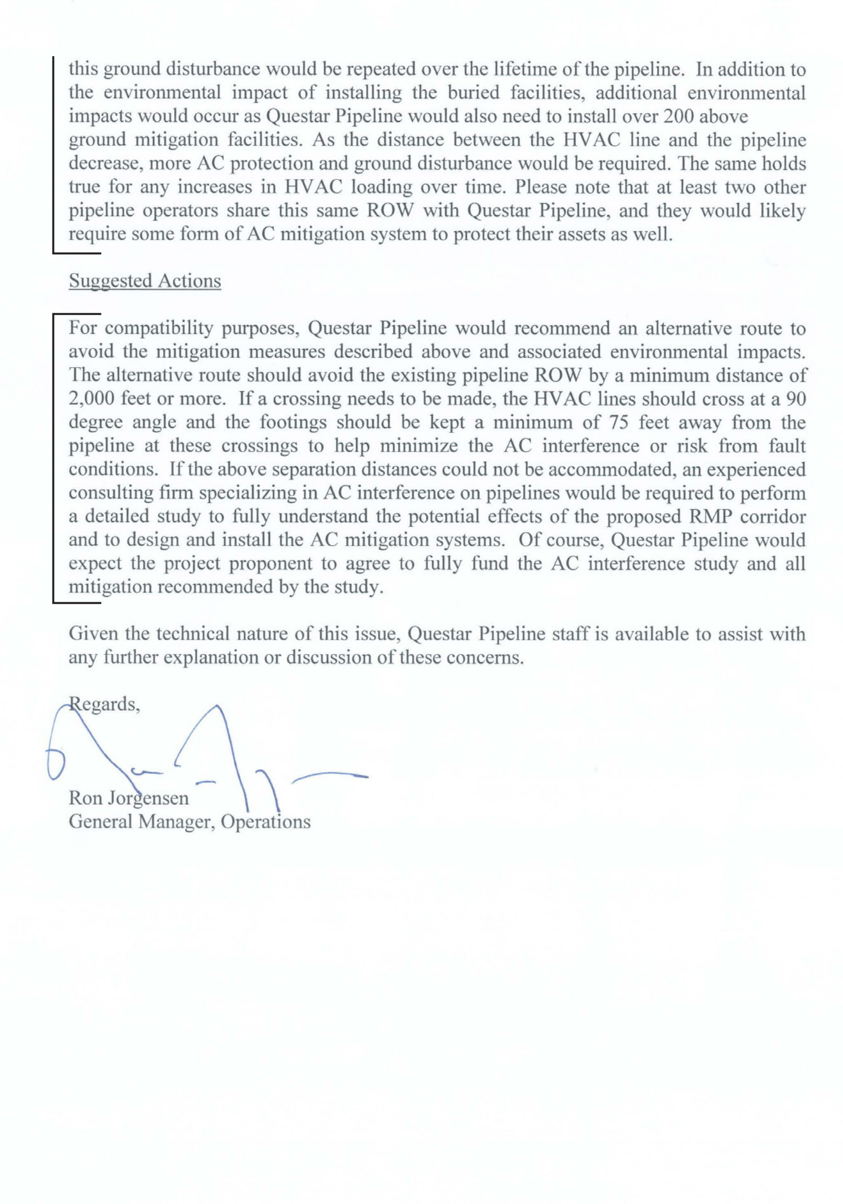
See response to Comment CP8b.

Comment(s)

Response(s)

CP8

Questar Pipeline Company (cont.)



CP8c

this ground disturbance would be repeated over the lifetime of the pipeline. In addition to the environmental impact of installing the buried facilities, additional environmental impacts would occur as Questar Pipeline would also need to install over 200 above ground mitigation facilities. As the distance between the HVAC line and the pipeline decrease, more AC protection and ground disturbance would be required. The same holds true for any increases in HVAC loading over time. Please note that at least two other pipeline operators share this same ROW with Questar Pipeline, and they would likely require some form of AC mitigation system to protect their assets as well.

Suggested Actions

CP8d

For compatibility purposes, Questar Pipeline would recommend an alternative route to avoid the mitigation measures described above and associated environmental impacts. The alternative route should avoid the existing pipeline ROW by a minimum distance of 2,000 feet or more. If a crossing needs to be made, the HVAC lines should cross at a 90 degree angle and the footings should be kept a minimum of 75 feet away from the pipeline at these crossings to help minimize the AC interference or risk from fault conditions. If the above separation distances could not be accommodated, an experienced consulting firm specializing in AC interference on pipelines would be required to perform a detailed study to fully understand the potential effects of the proposed RMP corridor and to design and install the AC mitigation systems. Of course, Questar Pipeline would expect the project proponent to agree to fully fund the AC interference study and all mitigation recommended by the study.

Given the technical nature of this issue, Questar Pipeline staff is available to assist with any further explanation or discussion of these concerns.

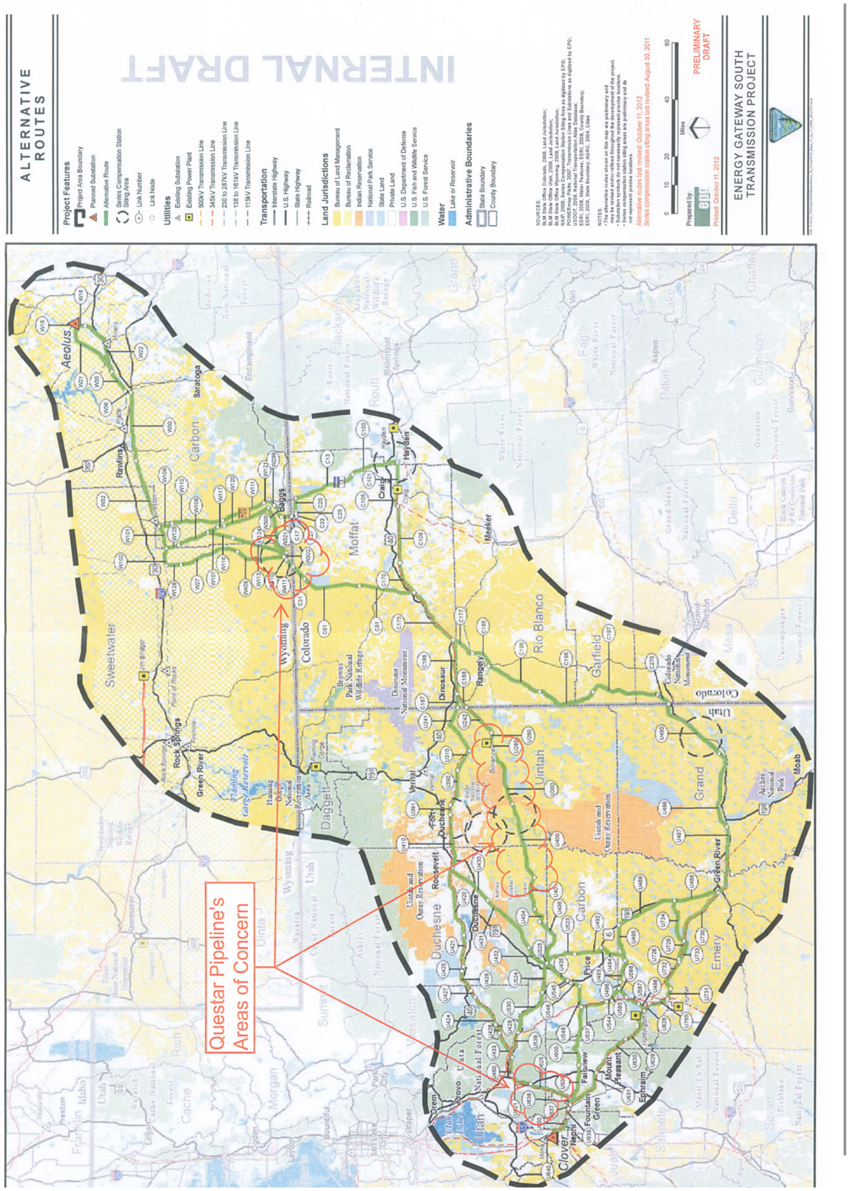
Regards,

Ron Jorgensen
General Manager, Operations

CP8d

This comment was forwarded to the Applicant; it is up to the Applicant to coordinate with pipeline company requests, including Questar.

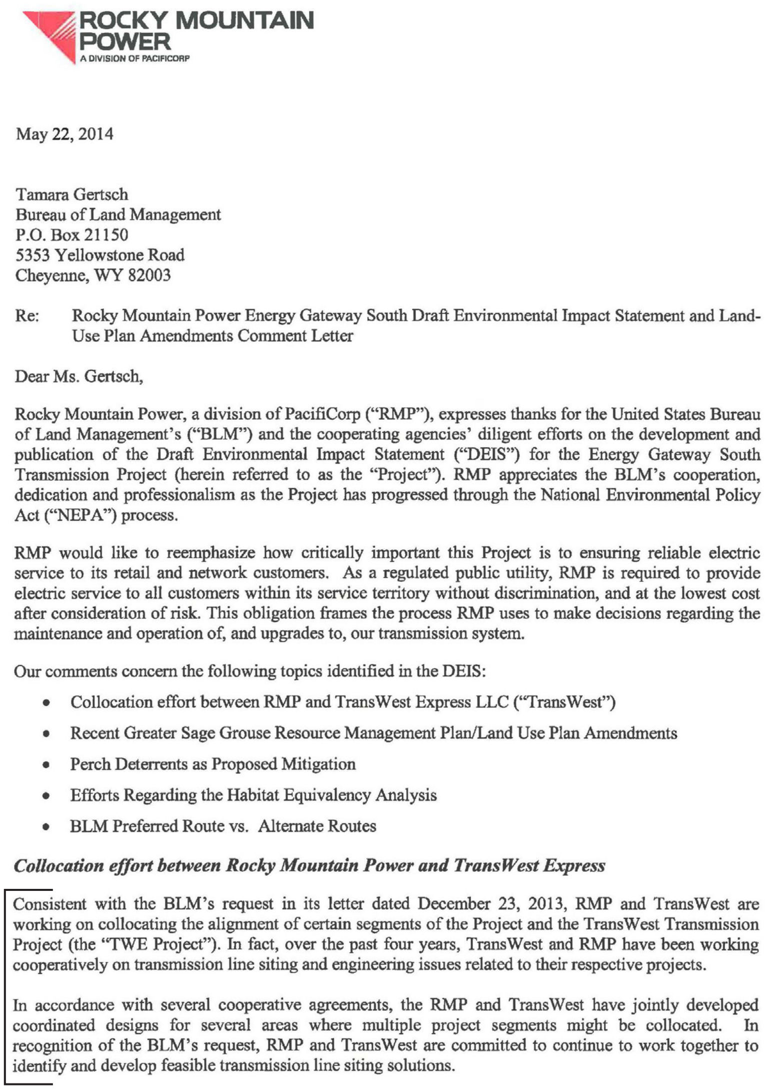
Comment(s)		Response(s)
CP8	**Questar Pipeline Company (cont.)**	



Comment(s)

Response(s)

CP9 **Rocky Mountain Power**



ROCKY MOUNTAIN
POWER
A DIVISION OF PACIFICORP

May 22, 2014

Tamara Gertsch
Bureau of Land Management
P.O. Box 21150
5353 Yellowstone Road
Cheyenne, WY 82003

Re: Rocky Mountain Power Energy Gateway South Draft Environmental Impact Statement and Land-Use Plan Amendments Comment Letter

Dear Ms. Gertsch,

Rocky Mountain Power, a division of PacifiCorp ("RMP"), expresses thanks for the United States Bureau of Land Management's ("BLM") and the cooperating agencies' diligent efforts on the development and publication of the Draft Environmental Impact Statement ("DEIS") for the Energy Gateway South Transmission Project (herein referred to as the "Project"). RMP appreciates the BLM's cooperation, dedication and professionalism as the Project has progressed through the National Environmental Policy Act ("NEPA") process.

RMP would like to reemphasize how critically important this Project is to ensuring reliable electric service to its retail and network customers. As a regulated public utility, RMP is required to provide electric service to all customers within its service territory without discrimination, and at the lowest cost after consideration of risk. This obligation frames the process RMP uses to make decisions regarding the maintenance and operation of, and upgrades to, our transmission system.

Our comments concern the following topics identified in the DEIS:

- Collocation effort between RMP and TransWest Express LLC ("TransWest")
- Recent Greater Sage Grouse Resource Management Plan/Land Use Plan Amendments
- Perch Deterrents as Proposed Mitigation
- Efforts Regarding the Habitat Equivalency Analysis
- BLM Preferred Route vs. Alternate Routes

Collocation effort between Rocky Mountain Power and TransWest Express

CP9a

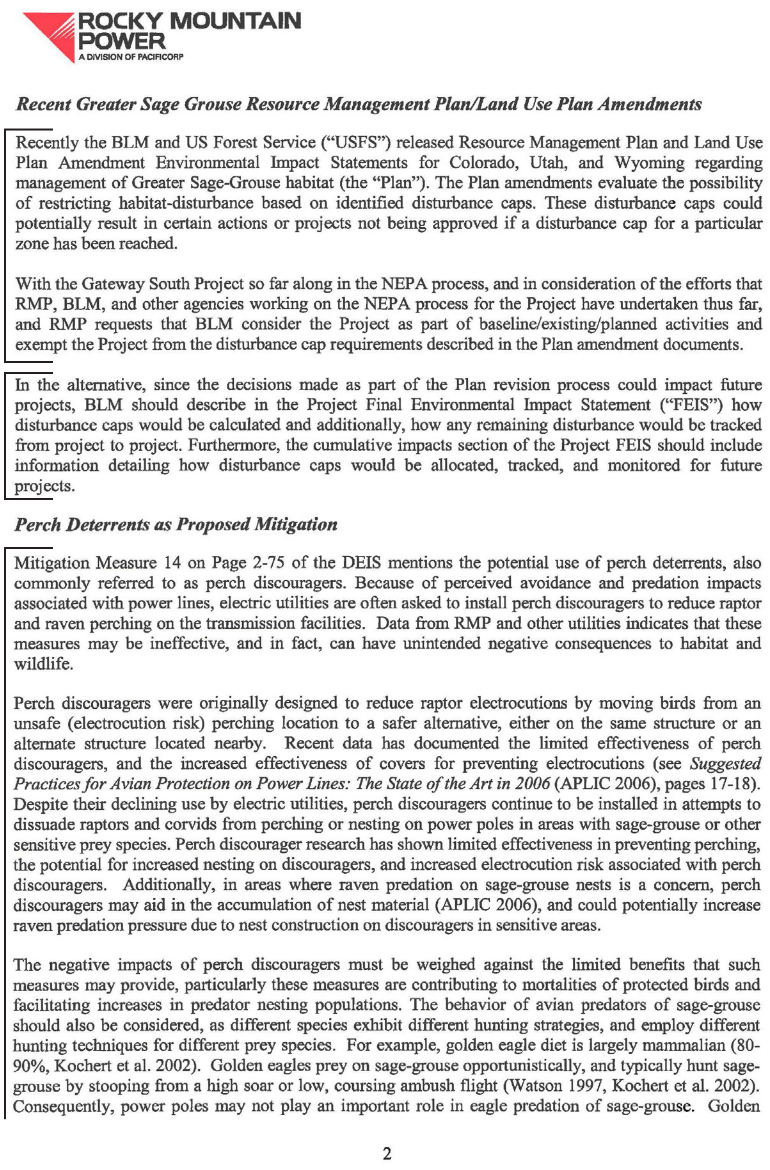
Consistent with the BLM's request in its letter dated December 23, 2013, RMP and TransWest are working on collocating the alignment of certain segments of the Project and the TransWest Transmission Project (the "TWE Project"). In fact, over the past four years, TransWest and RMP have been working cooperatively on transmission line siting and engineering issues related to their respective projects.

In accordance with several cooperative agreements, the RMP and TransWest have jointly developed coordinated designs for several areas where multiple project segments might be collocated. In recognition of the BLM's request, RMP and TransWest are committed to continue to work together to identify and develop feasible transmission line siting solutions.

CP9a Comment noted.

Comment(s)

CP9 **Rocky Mountain Power (cont.)**



ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Recent Greater Sage Grouse Resource Management Plan/Land Use Plan Amendments

CP9b

Recently the BLM and US Forest Service ("USFS") released Resource Management Plan and Land Use Plan Amendment Environmental Impact Statements for Colorado, Utah, and Wyoming regarding management of Greater Sage-Grouse habitat (the "Plan"). The Plan amendments evaluate the possibility of restricting habitat-disturbance based on identified disturbance caps. These disturbance caps could potentially result in certain actions or projects not being approved if a disturbance cap for a particular zone has been reached.

With the Gateway South Project so far along in the NEPA process, and in consideration of the efforts that RMP, BLM, and other agencies working on the NEPA process for the Project have undertaken thus far, and RMP requests that BLM consider the Project as part of baseline/existing/planned activities and exempt the Project from the disturbance cap requirements described in the Plan amendment documents.

CP9c

In the alternative, since the decisions made as part of the Plan revision process could impact future projects, BLM should describe in the Project Final Environmental Impact Statement ("FEIS") how disturbance caps would be calculated and additionally, how any remaining disturbance would be tracked from project to project. Furthermore, the cumulative impacts section of the Project FEIS should include information detailing how disturbance caps would be allocated, tracked, and monitored for future projects.

Perch Deterrents as Proposed Mitigation

CP9d

Mitigation Measure 14 on Page 2-75 of the DEIS mentions the potential use of perch deterrents, also commonly referred to as perch discouragers. Because of perceived avoidance and predation impacts associated with power lines, electric utilities are often asked to install perch discouragers to reduce raptor and raven perching on the transmission facilities. Data from RMP and other utilities indicates that these measures may be ineffective, and in fact, can have unintended negative consequences to habitat and wildlife.

Perch discouragers were originally designed to reduce raptor electrocutions by moving birds from an unsafe (electrocution risk) perching location to a safer alternative, either on the same structure or an alternate structure located nearby. Recent data has documented the limited effectiveness of perch discouragers, and the increased effectiveness of covers for preventing electrocutions (see *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006), pages 17-18). Despite their declining use by electric utilities, perch discouragers continue to be installed in attempts to dissuade raptors and corvids from perching or nesting on power poles in areas with sage-grouse or other sensitive prey species. Perch discourager research has shown limited effectiveness in preventing perching, the potential for increased nesting on discouragers, and increased electrocution risk associated with perch discouragers. Additionally, in areas where raven predation on sage-grouse nests is a concern, perch discouragers may aid in the accumulation of nest material (APLIC 2006), and could potentially increase raven predation pressure due to nest construction on discouragers in sensitive areas.

The negative impacts of perch discouragers must be weighed against the limited benefits that such measures may provide, particularly these measures are contributing to mortalities of protected birds and facilitating increases in predator nesting populations. The behavior of avian predators of sage-grouse should also be considered, as different species exhibit different hunting strategies, and employ different hunting techniques for different prey species. For example, golden eagle diet is largely mammalian (80-90%, Kochert et al. 2002). Golden eagles prey on sage-grouse opportunistically, and typically hunt sage-grouse by stooping from a high soar or low, coursing ambush flight (Watson 1997, Kochert et al. 2002). Consequently, power poles may not play an important role in eagle predation of sage-grouse. Golden

2

Response(s)

CP9b

The BLM is not required to evaluate potential restrictions contained in the alternatives considered in the federal sage-grouse mananagement planning process in the EIS for the Project. The analysis contained in the Final EIS for the Project is based on BLM and other cooperating agency policies and plans pertaining to sage-grouse management that are in effect at the time the analysis was prepared. If an action alternative is selected, the BLM's decision on the Project would comply with all relevant sage-grouse stipulations in applicable BLM resource management plans at the time the decision is issued.

CP9c

See response to comment CP9b.

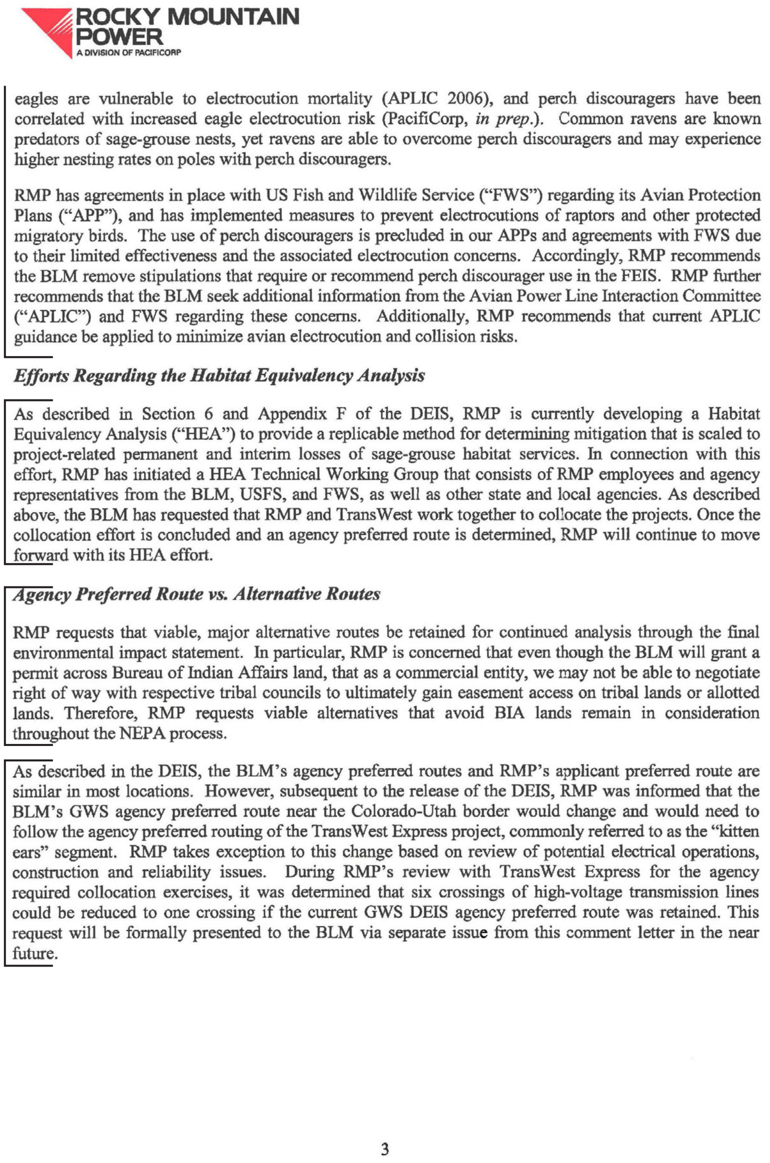
CP9d

Comment and mitigation preference noted. The BLM developed the mitigation described in the Draft EIS collaboratively with the cooperating agencies and the Applicant and in consideration of industry best practices, including those identified in documents published by the Avian Power Line Interaction Committee, BLM resource management plans, the U.S. Fish and Wildlife Service Conservation Objectives Team Report, and other relevant literature. Additional discussions with these parties between publication of the Draft and Final EIS have resulted in substantial modification and reduction in the recommendations for application of perch deterrents due to evidence suggesting limited effectiveness in many cases and the potential for increased risk of electrocution risk for avian species. Rather, the effects of raptor and corvid predation on sensitive prey species will be minimized by colocating the line with existing transmission lines to the extent feasible, which will reduce the proliferation of perch sites in new areas across the landscape.

Comment(s)

Response(s)

CP9 **Rocky Mountain Power (cont.)**



ROCKY MOUNTAIN
POWER
A DIVISION OF PACIFICORP

eagles are vulnerable to electrocution mortality (APLIC 2006), and perch discouragers have been correlated with increased eagle electrocution risk (PacifiCorp, *in prep*.). Common ravens are known predators of sage-grouse nests, yet ravens are able to overcome perch discouragers and may experience higher nesting rates on poles with perch discouragers.

CP9d RMP has agreements in place with US Fish and Wildlife Service ("FWS") regarding its Avian Protection Plans ("APP"), and has implemented measures to prevent electrocutions of raptors and other protected migratory birds. The use of perch discouragers is precluded in our APPs and agreements with FWS due to their limited effectiveness and the associated electrocution concerns. Accordingly, RMP recommends the BLM remove stipulations that require or recommend perch discourager use in the FEIS. RMP further recommends that the BLM seek additional information from the Avian Power Line Interaction Committee ("APLIC") and FWS regarding these concerns. Additionally, RMP recommends that current APLIC guidance be applied to minimize avian electrocution and collision risks.

Efforts Regarding the Habitat Equivalency Analysis

CP9e As described in Section 6 and Appendix F of the DEIS, RMP is currently developing a Habitat Equivalency Analysis ("HEA") to provide a replicable method for determining mitigation that is scaled to project-related permanent and interim losses of sage-grouse habitat services. In connection with this effort, RMP has initiated a HEA Technical Working Group that consists of RMP employees and agency representatives from the BLM, USFS, and FWS, as well as other state and local agencies. As described above, the BLM has requested that RMP and TransWest work together to collocate the projects. Once the collocation effort is concluded and an agency preferred route is determined, RMP will continue to move forward with its HEA effort.

Agency Preferred Route vs. Alternative Routes

CP9f RMP requests that viable, major alternative routes be retained for continued analysis through the final environmental impact statement. In particular, RMP is concerned that even though the BLM will grant a permit across Bureau of Indian Affairs land, that as a commercial entity, we may not be able to negotiate right of way with respective tribal councils to ultimately gain easement access on tribal lands or allotted lands. Therefore, RMP requests viable alternatives that avoid BIA lands remain in consideration throughout the NEPA process.

CP9g As described in the DEIS, the BLM's agency preferred routes and RMP's applicant preferred route are similar in most locations. However, subsequent to the release of the DEIS, RMP was informed that the BLM's GWS agency preferred route near the Colorado-Utah border would change and would need to follow the agency preferred routing of the TransWest Express project, commonly referred to as the "kitten ears" segment. RMP takes exception to this change based on review of potential electrical operations, construction and reliability issues. During RMP's review with TransWest Express for the agency required collocation exercises, it was determined that six crossings of high-voltage transmission lines could be reduced to one crossing if the current GWS DEIS agency preferred route was retained. This request will be formally presented to the BLM via separate issue from this comment letter in the near future.

3

CP9e Comment noted.

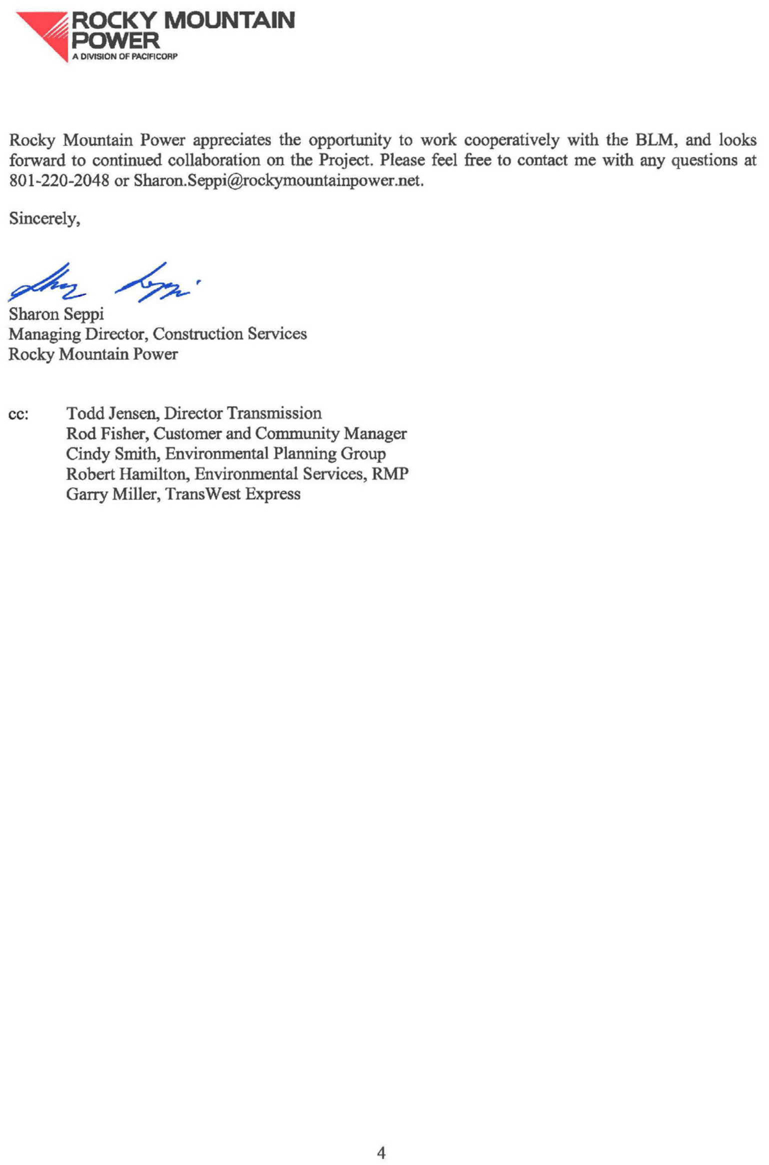
CP9f All major alternative routes and route variations analyzed in the Draft EIS are retained in the Final EIS.

CP9g *[Response pending results of current coordination between BLM and the Applicant.]*

Comment(s)

Response(s)

CP9 **Rocky Mountain Power (cont.)**



ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Rocky Mountain Power appreciates the opportunity to work cooperatively with the BLM, and looks forward to continued collaboration on the Project. Please feel free to contact me with any questions at 801-220-2048 or Sharon.Seppi@rockymountainpower.net.

Sincerely,

Sharon Seppi
Managing Director, Construction Services
Rocky Mountain Power

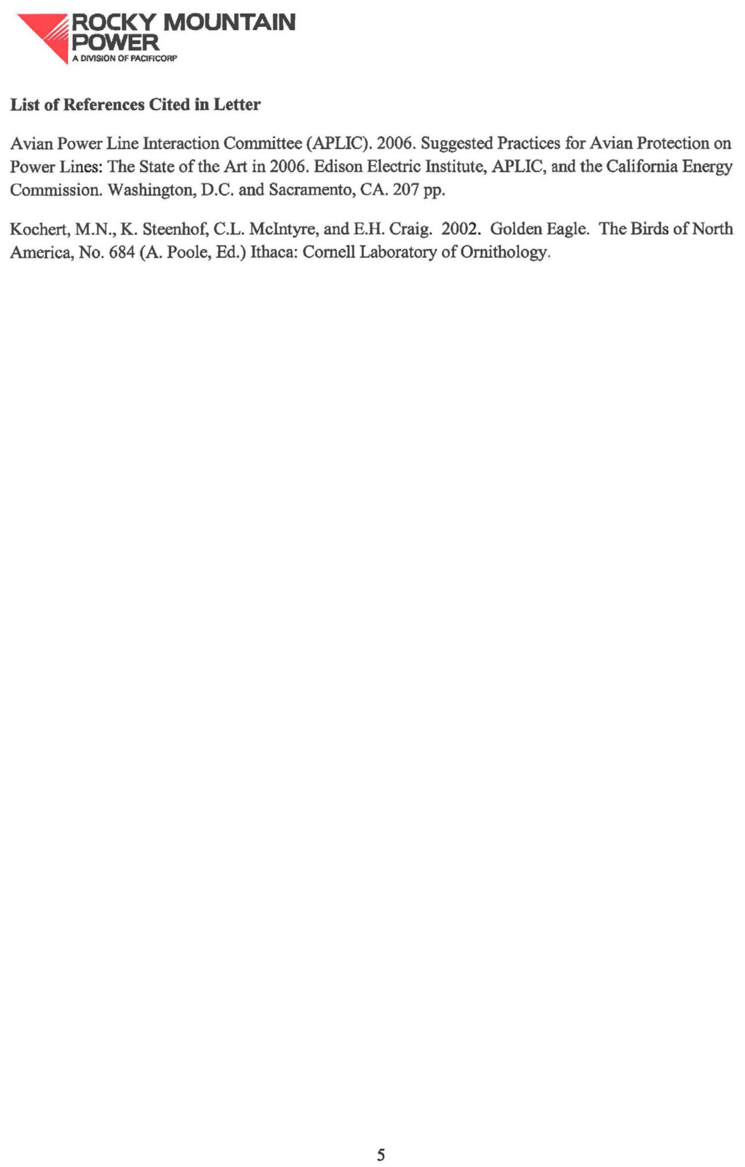
cc: Todd Jensen, Director Transmission
Rod Fisher, Customer and Community Manager
Cindy Smith, Environmental Planning Group
Robert Hamilton, Environmental Services, RMP
Garry Miller, TransWest Express

Comment(s)

Response(s)

CP9

Rocky Mountain Power (cont.)



ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

List of References Cited in Letter

Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA. 207 pp.

Kochert, M.N., K. Steenhof, C.L. McIntyre, and E.H. Craig. 2002. Golden Eagle. The Birds of North America, No. 684 (A. Poole, Ed.) Ithaca: Cornell Laboratory of Ornithology.

Comment(s)

Response(s)

CP10 **TransWest Express LLC**

TRANSWEST EXPRESS LLC

555 Seventeenth Street
Suite 2400
Denver, CO 80202
Tel 303.298.1000
Fax 303.299.1356

VIA EMAIL DELIVERY

May 22, 2014

Tamara Gertsch, Project Manager
Energy Gateway South Project
Bureau of Land Management, Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
gatewaysouth_WYMail@blm.gov

Re: Comments on BLM Draft EIS for the Energy Gateway South Transmission Project

Dear Ms. Gertsch:

TransWest Express LLC (TransWest) appreciates the opportunity to provide comments on the Bureau of Land Management (BLM) Draft Environmental Impact Statement (DEIS) for the Energy Gateway South Transmission Project (Gateway South), as noticed in the *Federal Register* on February 21, 2014 (79 FR 9916).

TransWest is the proponent of the TransWest Express Transmission Project (TWE Project), which is the subject of a separate environmental analysis being conducted by the BLM Wyoming State Office and Western Area Power Administration (Western) as joint lead federal agencies. BLM and Western issued the Draft Environmental Impact Statement (TWE DEIS) for the TWE Project on July 3, 2013. According to the BLM Wyoming "NEPA Hotsheet" published on April 1, 2014, the TWE Project's "Final EIS is anticipated to be published in September 2014." In addition, the TWE Project was designated in 2011 as a priority project by the federal interagency Rapid Response Team for Transmission, whose purpose is to "accelerate responsible and informed deployment of several key transmission facilities."

In Wyoming, Colorado and Utah, the applicant proposed action for the TWE Project, the agency preferred alternative as identified in the TWE DEIS, and other action alternatives under consideration fall within the same planning area as Gateway South. Specifically, the corridors considered for the Gateway South project parallel many of the corridors for the TWE Project.

CP10a Accordingly, at BLM's request, TransWest and PacifiCorp (doing business as Rocky Mountain Power) have worked together under several agreements that document the Parties' commitment to work cooperatively on siting and engineering matters related to the TWE Project and to PacifiCorp's Gateway South, Gateway West, and Sigurd to Red Butte Projects. The Parties' agreements include a Ranch Lands Coordination Agreement and an Engineering Coordination

CP10a Comment noted.

Comment(s)

CP10 **TransWest Express LLC (cont.)**

Bureau of Land Management
May 22, 2014
Page 2

TRANSWEST EXPRESS LLC

CP10a Agreement. Working together pursuant to the agreements, the Parties developed coordinated designs for several areas where multiple projects might be co-located. For example, TransWest and PacifiCorp developed a coordinated design approach that would allow Gateway West, Gateway South and the TWE Project to be sited in the corridor along I-80 in Wyoming and, in fact, submitted this coordinated design to the BLM in March 2012. The Parties also have closely examined the possible co-location of the TWE Project and Gateway South Project routing from Wamsutter, Wyoming, to Nephi, Utah, consisting of approximately 375 miles. TransWest and PacifiCorp reviewed their ability to co-locate the projects along the agency preferred alternative being considered in both EIS's and have determined that if the BLM co-locates the two projects, they can coordinate alignments as necessary.

TransWest has three specific comments about the Gateway South DEIS.

1. *Tribal Lands*

CP10b The agency preferred alternative for the segment referred to as Colorado to Utah (COUT) crosses 2.7 miles of tribal lands within the Uintah and Ouray Indian Reservation. The DEIS correctly notes (p. S-39) that the Tribe would have to agree to grant an easement. The Tribe has inherent sovereign power over the lands within its reservation. Tribal consent is required to obtain a right-of-way across tribal lands under 25 U.S.C. §324. Moreover, federal laws prohibit conveyances of Indian lands unless authorized by Congress, and there is no federal statute authorizing condemnation of rights-of-way across tribal lands (though there is authority to condemn allotted Indian lands, 25 U.S.C. §357).

Given the uncertainties associated with obtaining a right-of-way across tribal lands on commercially acceptable terms, TransWest recommends that an alternative that would avoid tribal lands be authorized as an alternative to the selected COUT route, in the event the applicant is unable to reach an agreement with the Tribe for an easement. Such an approach would be similar to that adopted in the Record of Decision on the Gateway West Transmission Project (Gateway West ROD at p. 19). In the case of the Gateway West Project, the BLM issued a right-of-way for two alignments of the transmission line route in the vicinity of Cokeville, Wyoming. The decision as to which alignment would ultimately be selected depended on the applicant's ability to obtain private land easements in the area, and the ultimate route would then be authorized under a Notice to Proceed issued by the BLM. Similarly, here the applicant's ability to obtain an easement from the Tribe will ultimately control the route of the transmission line, as there is no condemnation authority against the Tribe.

CP10c We note, in addition, that the Gateway South DEIS does not describe any review of tribal land use plans and so does not disclose any possible conflicts between such plans and the agency preferred alternative (COUT-C-3). This should be remedied in the Final EIS.

2. *Criteria for Selection of the Agency Preferred Alternative*

CP10d It is difficult to discern what parameters the BLM used to identify the agency preferred alternative. Section 2.5 describes the screening process undertaken by Rocky Mountain Power and the Bureau of Land Management to identify the alternatives and eliminate unreasonable

Response(s)

CP10b Additional description of the criteria for the identification of the agency preferred alternative has been added to Section 2.7.1.

Regarding the commenter's statement that the Final EIS should "should clearly disclose BLM's rationale for their selection of the agency preferred alternative to provide transparency regarding decision-making," the commenter is reminded the agency preferred alternative does not constitute a commitment or decision by the lead agency and there is no requirement to select the agency preferred alternative in the Record of Decision. Further, CEQ's Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations direct that "even though the agency's preferred alternative is identified by the EIS preparer in the EIS, the statement must be objectively prepared and not slanted to support the choice of the agency's preferred alternative over the other reasonable and feasible alternatives." Finally, 40 CFR 1505.2(b) states the rationale for the decision (i.e., the route selected for construction) must be provided in the Record of Decision.

CP10c No tribal land use plans have been identified during government-to-government consultation between BLM and associated American Indian tribes.

Comment(s)

Response(s)

CP10 **TransWest Express LLC (cont.)**

Bureau of Land Management
May 22, 2014
Page 3

TRANSWEST EXPRESS LLC

alternatives. Section 2.5.1.3 (pp. 2-67) states that the results of the comparison of alternative routes are presented in Section 2.7.

However, Section 2.7.1 merely describes the route of the agency preferred alternative after stating that this is the route that the BLM, in coordination with the cooperating agencies, believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors. There is no way for the reader to discern how BLM weighed the impacts to various resources to arrive at the agency preferred alternative.

Section 3.2 refers to Tables S-16a – S-16d for a comparison of results of the effects analysis for the alternative routes. We find no such tables. But we assume that this reference should instead be to Tables S-3a – S-3d.

CP10d A review of those tables leaves the reader wondering how the BLM weighed the various negative impacts of the agency preferred alternative as compared to similar or lesser impacts under other alternatives. TransWest believes that the Final EIS should clearly disclose BLM's rationale for the selection of the agency preferred alternative to provide transparency regarding the decision-making. As it stands, it is unclear what parameters were considered most important by the BLM in selecting the agency preferred alternative.

For example, if impacts of alternative COUT-A for special status wildlife are compared to those for the agency preferred alternative, it would appear that alternative COUT-A would be preferable, as fewer miles of black-footed ferret management area are crossed, fewer miles of mountain plover potential habitat are crossed, no Mexican spotted-owl habitat is crossed, and fewer sage-grouse leks are located within 4 miles of the centerline (less than half). Alternative COUT-A does affect slightly more miles of white-tailed prairie dog potential habitat, so the reader is left to wonder if potential white-tailed prairie dog habitat is a controlling rationale when comparing impacts to special status wildlife.

We recognize that there are impacts to various resources from any of the alternatives and that weighing the impacts is a difficult job. However, the parameters relied upon by the BLM to identify the agency preferred alternative should be fully disclosed and made transparent to the public.

3. *Analysis of Impacts to Lynx, Grey Wolf and Wolverine*

CP10e Unlike the DEIS on the TWE Project, which in many areas parallels the alternatives analyzed in the Gateway South DEIS, this DEIS does not contain any analysis of potential impacts to the lynx, grey wolf and wolverine.

Because those species have the potential to occur in portions of the alternatives, TransWest recommends that the Final EIS include a discussion of the impacts of the proposed Gateway South project and its alternatives on those species.

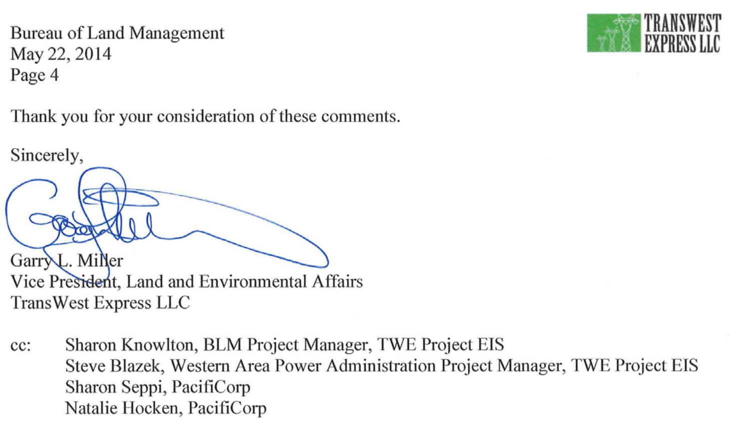
CP10d Additional description of the rationale for the identification of the agency preferred alternative has been added to Section 2.7.1.

CP10e An analysis of potential impacts on lynx, grey wolf, and wolverine was completed for the Final EIS, and is presented in Section 3.2.8.

Comment(s)

Response(s)

CP10 **TransWest Express LLC (cont.)**



TRANSWEST EXPRESS LLC

Bureau of Land Management
May 22, 2014
Page 4

Thank you for your consideration of these comments.

Sincerely,

Garry L. Miller
Vice President, Land and Environmental Affairs
TransWest Express LLC

cc: Sharon Knowlton, BLM Project Manager, TWE Project EIS
Steve Blazek, Western Area Power Administration Project Manager, TWE Project EIS
Sharon Seppi, PacifiCorp
Natalie Hocken, PacifiCorp

Exhibit P7
Individuals

Comment(s)

I1 **John and Mickey Allen**

From: **Mickey** <jackpinesavageco@earthlink.net>
Date: Tue, May 20, 2014 at 2:33 PM
Subject: Gateway South DEIS
To: GatewaySouth_WYMail@blm.gov

Attn: Tamara Gertsch

Dear Ms. Gertsch,

We are an old retired couple, heavy equipment operator for Rio Blanco County Road & Bridge and nurse. We've lived in Rangely for 38 years.

I1a We understand that the Little Snake choice in routing Gateway South will be much easier to accomplish. What disturbs us is this: we will be losing little—hopefully little—chunks of sage grouse habitat. Maybe it won't make much difference, but maybe it will. And if the sage grouse population gets down to the level that would precipitate Endangered Species listing, the resultant problems would be enormous for almost everyone. Why not use the Hwy. 13 route and make listing a little less likely? A little harder now, way easier in the future. And we love to drive along the Little Snake the way it is now. It's beautiful. And a trip a year ago to watch the sage grouse dance was an experience we will never forget.

Sincerely,
John and Mickey Allen
PO Box 887
Rangely, CO 81648
970-675-2421
jackpinesavageco@earthlink.net

Response(s)

I1a Comment and route preference noted.

Comment(s)

I2 Nancy and Victor Anderson

From: **Nancy & Victor Anderson** <victora2@carbonpower.net>
Date: Wed, May 21, 2014 at 8:11 PM
Subject: eis comments
To: GatewaySouth_WYMail@blm.gov

To Whom It May Concern:

My comments on this eis are divided into two categories, those affecting cultural resources in my immediate area (from Aeolus to Fort Steele) and those affecting my family personally.

I2a This is an unbelievable document, full of repetition and extraneous information, which seems plugged in from some wikipedia in the sky. Instead of a true inventory of cultural resources, there appears a general timeline of Wyoming history, much of it dubious upon close inspection. I have been acquainted with this area for fifty years, ridden much of it on horseback, studied it, gathered stories about it. While some consideration is given the trails and a passing nod to Fort Fred Steele and the ghost town of Carbon, as examples, where are the pit houses uncovered during Hanna's mining operations, where is the discussion of the West's most important transportation corridor: the original line of the Union Pacific, the Lincoln Highway (both misplaced in the mention which does appear), the route of the first airmail flights? Artifacts of all these remain intact. May I suggest surveys be done on the ground instead of from cyberspace or at 9,000 feet?

I2b As for the "C grade" for scenery, the BLM confirmed that these grades were given for the ability of the BLM to control what occurred there rather than for an aesthetic judgement. Your document seems to use this "C grade" as justification for cluttering the landscape.

I2c My husband and I attended the open house in Rawlins. It was rather disconcerting to discover that the preferred line would have one foot in our house and another in the chicken house. Moreover, the presenters apologized by telling us that according to their records, we didn't actually own that property; my husband's family homesteaded here over eighty years ago.

The real question is not a choice of route but how can such material be considered for any purpose.

Sincerely,
Victor Anderson
Nancy Anderson, Director, Hanna Basin Museum

Response(s)

I2a As stated in the Environmental Impact Statement (EIS), the discussion of the prehistory and history of the three states involved in the Energy Gateway South Transmission Project (Project) (Wyoming, Colorado, and Utah) is intended to provide a chronology and cultural framework, as well as a general, descriptive overview of the regions. The material presented speaks to previously established temporal schemes and archaeological and historical evidence/events that provide valuable information to be used in the review processes as well as for future intensive-level surveys and National Register of Historic Places (NRHP) nominations. These cultural contexts are not comprehensive histories of the regions, but a first step in assessing the significance of the regions and determining how to look at the regions' cultural resources. As survey work is conducted, the historic contexts, cultural themes, and significant cultural resources presented will be further discussed (Class I and Class III inventory reports).

The cultural context is not intended to provide a comprehensive overview of all significant cultural resources in south-central Wyoming (i.e., near the Project area); rather, the information is focused on the specific areas and cultural resources (some identified as key issues) where the proposed Project would be located. A more detailed discussion on key issues was provided early in Section 3.2.20 under the subheading Issues Identified for Analysis Fort Fred Steele Historic Site, Ghost Town of Carbon, and the Overland and Cherokee historic trails). The Fort Fred Steele Historic Site is located 2.54 miles north of proposed Link W30 (all WYCO alternative routes and route variations). The historic town of Carbon is located approximately 10 miles east-southeast of Hanna in Carbon County, south of proposed Link W22. Due to their distance from the Project, Fort Fred Steele and Carbon would not be subject to direct effects from the Project. There is some potential for indirect effects resulting from the Project if a WYCO alternative route or route variation was selected. The Union Pacific and the Lincoln Highway are located in the Project area and were discussed throughout the document, being first mentioned in the historic outline under their period of consideration. If one of the WYCO alternative routes or route variations is selected, a Class III intensive pedestrian inventory (survey) of the selected route and associated roads, substations, and ancillary facilities would be conducted. All cultural resources sites identified would be documented and evaluated for eligibility for the NRHP and appropriate selective mitigation measures identified in consultation with involved state and federal land-management agencies and private landowners.

I2b See next page for response to I2b.

I2c See next page for response to I2c.

Comment(s)

Response(s) - continued

I2 **Nancy and Victor Anderson - continued**

I2b According to Bureau of Land Management (BLM) Handbook 8410, "Scenic quality is a measure of the visual appeal of a tract of land. … An important premise of the evaluation is that all public lands have scenic value, but areas with the most variety and most harmonious composition have the greatest scenic value". The scenery classifications were used to assess level of impacts on scenery with the areas of Class A and B receiving higher impacts than Class C for a given level of contrast. It is important to note, the visual assessment also includes impacts on views from residences, recreation sites, travel routes, and special designations, which were assessed independently from impacts on scenery.

I2c Regarding private lands, the impact on property rights will be carefully considered by PacifiCorp, doing business as Rocky Mountain Power (Applicant), during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with National Electrical Safety Code (NESC), the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

Comment(s)

I3 **Rian B. Anderson**

From: **Rian B. Anderson** <rian@cut.net>
Date: Tue, Apr 29, 2014 at 8:54 AM
Subject: Comment on Draft EIS and LUPAs
To: GatewaySouth_WYMail@blm.gov

Dear Sirs:

I3a I support the AGENCY PREFERRED ROUTE for the Energy Gateway South Transmission Project and encourage you to use this route.

I highly oppose the portion of the Applicant Preferred Route that dips down through Carbon and Sanpete Counties.

Thank you.

Sincerely,

Rian B. Anderson
45 S 400 E
Fairview, UT 84629
435-427-9388
rian@cut.net

Response(s)

I3a Comment and route preference noted.

Comment(s)

Response(s)

I4 | **Vito Angelotti**

From: **Vito Angelotti** <vitoangelotti73@gmail.com>
Date: Tue, Mar 4, 2014 at 8:55 PM
Subject: Energy Gateway South Transmission Project Draft EIS
To: GatewaySouth_WYMail@blm.gov

To the Responsible Government Official:

Can the government make up its own acronyms on the fly? FYI, "LUPA" means "she-wolf" or "prostitute" or "bitch" in Italy and the finer parts of New Jersey.

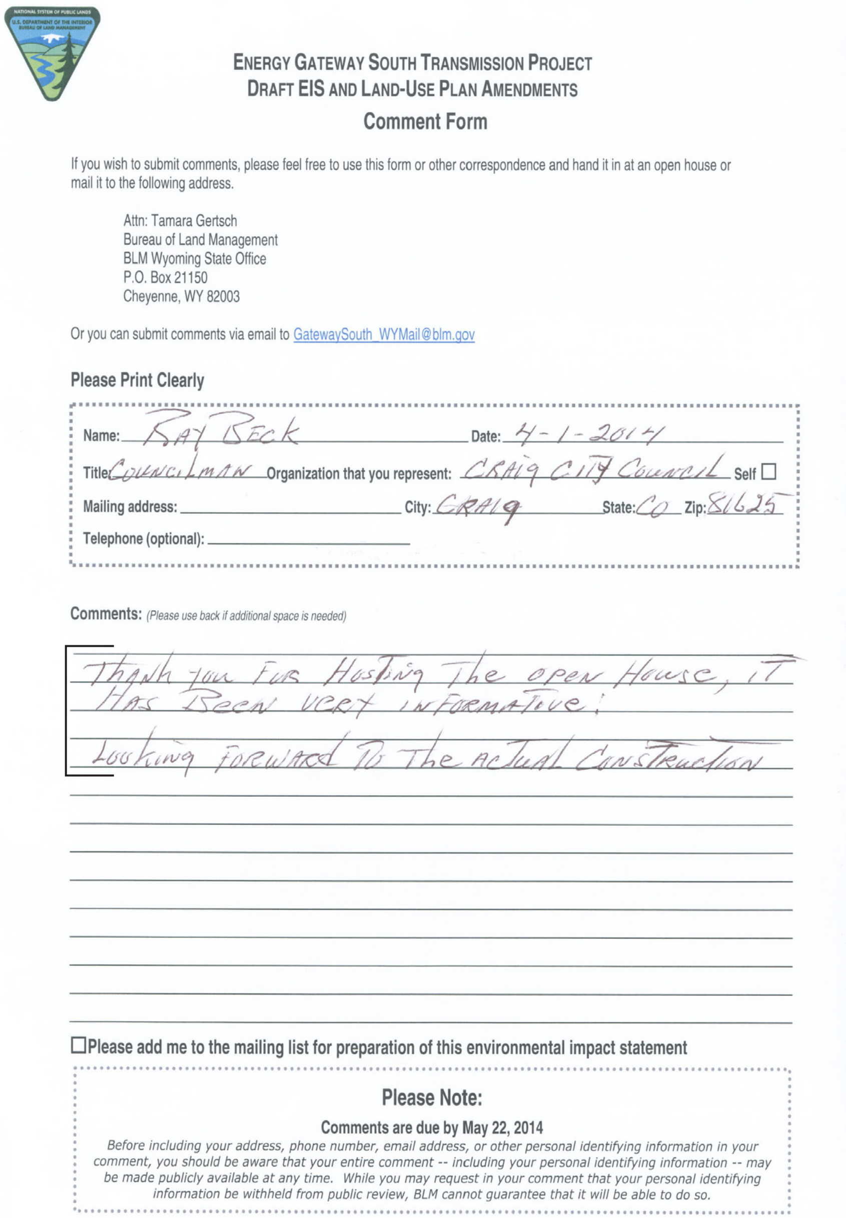
Seems like our tax money and utility payments were wasted by taking so long to produce such a massive document that says so little.

Vito R. Angelotti
Embarrassed Tax Payer

Comment(s)

Response(s)

I5 | **Ray Beck**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Ray Beck Date: 4-1-2014
Title: Councilman Organization that you represent: Craig City Council Self ☐
Mailing address: City: Craig State: CO Zip: 81625
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I5a Thank you for Hosting The open House, it Has Been very informative!

Looking forward To The actual Construction

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I5a Comment noted.

Comment(s)

Response(s)

I6 **Tyler Bench**

From: <TYLERBENCH@comcast.net>
Date: Fri, May 9, 2014 at 12:52 PM
Subject: Support for BLM alternate route
To: gatewaysouth_wymail@blm.gov

Ms Gertsch,

I6a As a property owner within the 2-mile corridor of the industry preferred route (specifically, I own property in the Gooseberry Estates subdivision at the top of Fairview Canyon), I wanted to voice my support of the BLM preferred route through central Utah that will go down the north side of Highway 6, turn south at Highway 89 and continue to Nephi. I understand that there are many that have the "not in my back yard" mindset, and in this instance I would have to admit I am one of them. However, there are many other factors that lead me to support the BLM alternate route. First, the BLM preferred route impacts fewer residences, specifically in the Fairview area. Second, the BLM preferred route follows currently existing energy corridors, eliminating the needs to scar the landscape by removing trees, brush and other mature vegetation. Third, the BLM preferred route would not be in the vicinity of the Highway 89 Heritage Highway and would not impact the National Scenic Byway route in Fairview Canyon (which would be impacted by two crossings if the industry preferred route is approved).

While I understand that I am one voice with my own opinion, I know that there are thousands more out there, many which haven't provided their comments, that share these same sentiments as I do. I would urge the BLM to look at the overall impact to the National Forest, private landowners and historical designations and place more weight on these factors than on Rocky Mountain Power's cost to construct this project. Costs will be recouped (it may take a few years longer) and RMP will not be harmed if they have to wait a little while longer to recoup their investment BUT long term impact as a result of installing this power line in an area which has not been disturbed, will never recover, no matter how well they try to reclaim their right of way.

I urge you to deny RMP's proposed route and support the BLM preferred route.

Respectfully,

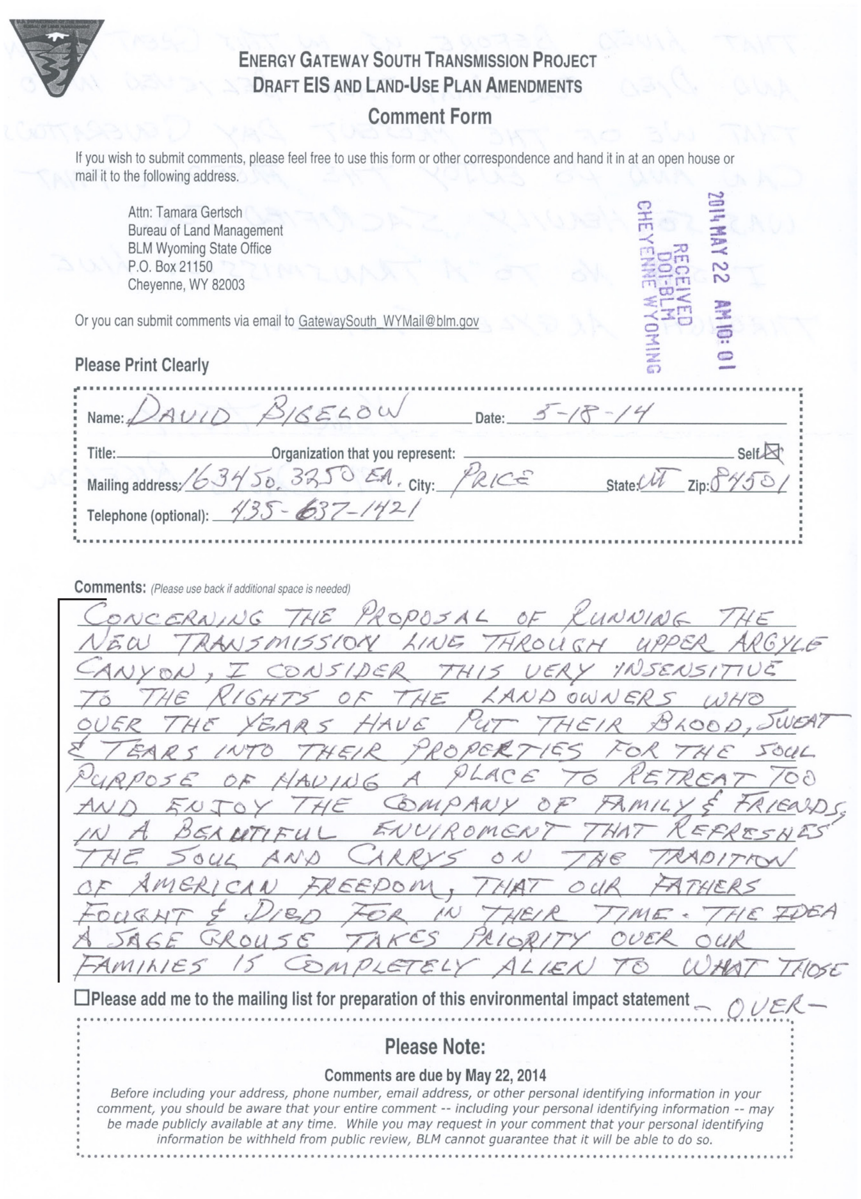
Tyler Bench
Lot 11
Gooseberry Estates Subdivision, Skyline Property Owners Association
801-831-8046

I6a Comment and route preference noted.

Comment(s)

Response(s)

I7 **David Bigelow**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 MAY 22 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: DAVID BIGELOW Date: 5-18-14
Title: Organization that you represent: Self ☒
Mailing address: 1634 So. 3250 EA. City: PRICE State: UT Zip: 84501
Telephone (optional): 435-637-1421

Comments: *(Please use back if additional space is needed)*

I7a CONCERNING THE PROPOSAL OF RUNNING THE NEW TRANSMISSION LINE THROUGH UPPER ARGYLE CANYON, I CONSIDER THIS VERY INSENSITIVE TO THE RIGHTS OF THE LANDOWNERS WHO OVER THE YEARS HAVE PUT THEIR BLOOD, SWEAT & TEARS INTO THEIR PROPERTIES FOR THE SOUL PURPOSE OF HAVING A PLACE TO RETREAT TOO AND ENJOY THE COMPANY OF FAMILY & FRIENDS, IN A BEAUTIFUL ENVIROMENT THAT REFRESHES THE SOUL AND CARRYS ON THE TRADITION OF AMERICAN FREEDOM, THAT OUR FATHERS FOUGHT & DIED FOR IN THEIR TIME. THE IDEA A SAGE GROUSE TAKES PRIORITY OVER OUR FAMILIES IS COMPLETELY ALIEN TO WHAT THOSE

☐ Please add me to the mailing list for preparation of this environmental impact statement – OVER –

Please Note:

Comments are due by May 22, 2014

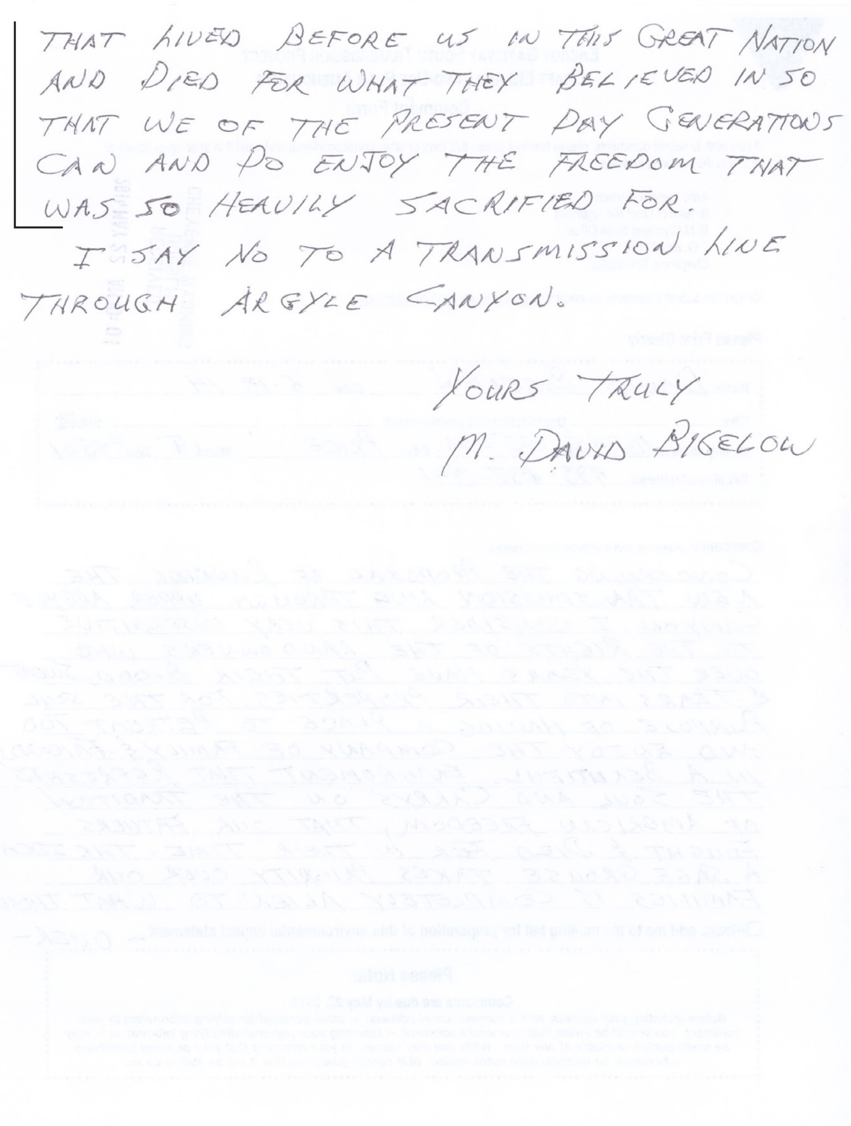
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I7a Comment and route preference noted.

Comment(s)

Response(s)

I7	**David Bigelow (cont.)**



I7a

THAT LIVED BEFORE US IN THIS GREAT NATION AND DIED FOR WHAT THEY BELIEVED IN SO THAT WE OF THE PRESENT DAY GENERATIONS CAN AND DO ENJOY THE FREEDOM THAT WAS SO HEAVILY SACRIFIED FOR.

I SAY NO TO A TRANSMISSION LINE THROUGH ARGYLE CANYON.

YOURS TRULY

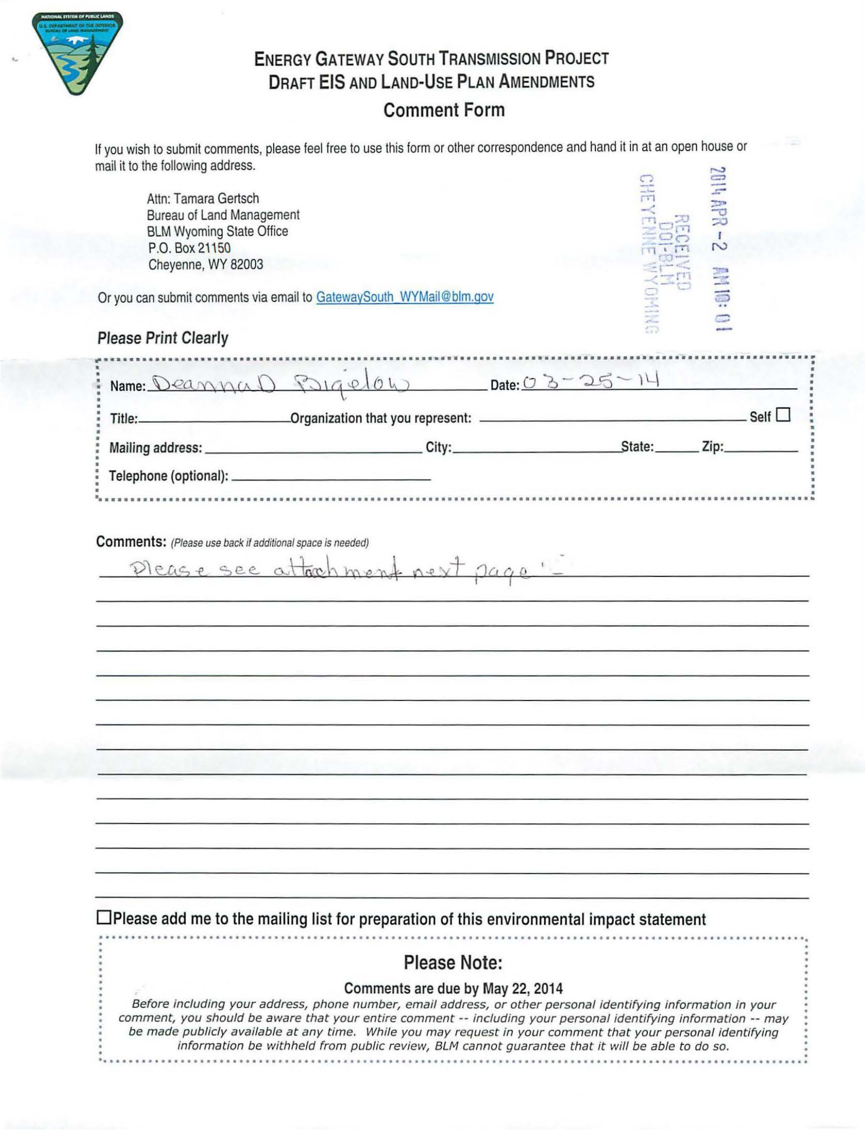
M. DAVID BIGELOW

Comment(s)

Response(s)

I8

Deanna D. Bigelow



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 APR -2 AM 10:01

Please Print Clearly

Name: Deanna D Bigelow Date: 03-25-14

Title: Organization that you represent: Self ☐

Mailing address: City: State: Zip:

Telephone (optional):

Comments: *(Please use back if additional space is needed)*

Please see attachment next page '-

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

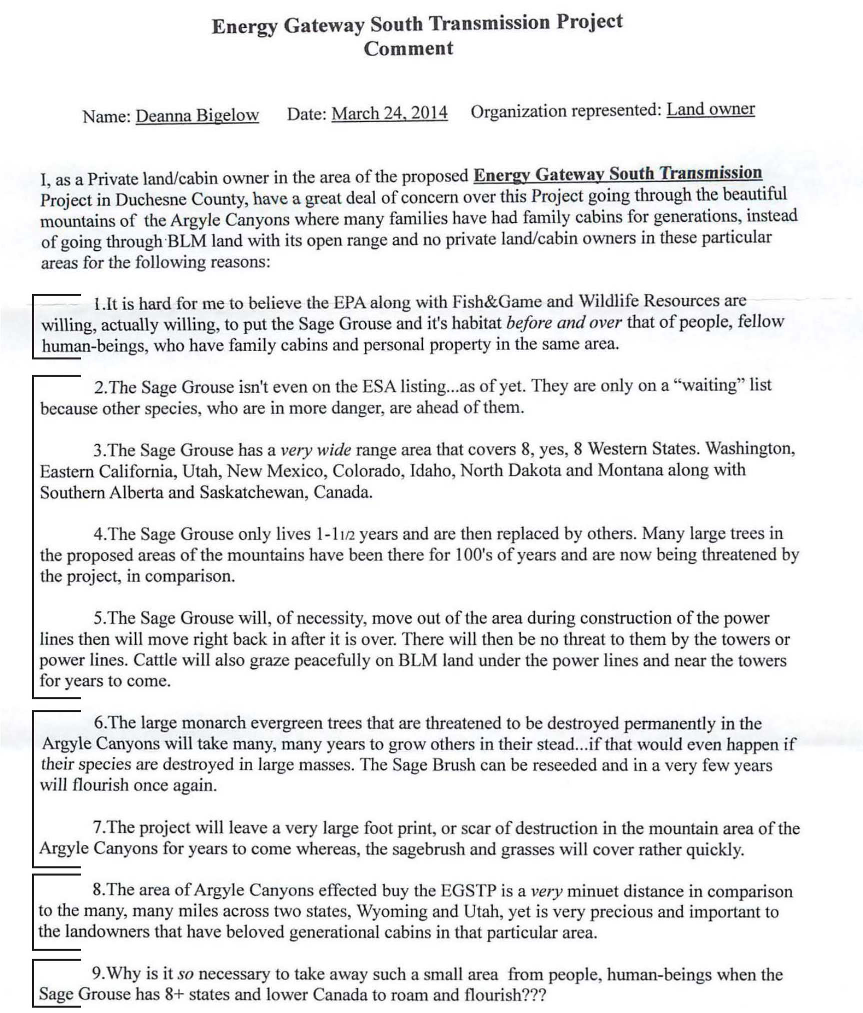
Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Comment(s)

Response(s)

I8 **Deanna D. Bigelow (cont.)**



Energy Gateway South Transmission Project
Comment

Name: Deanna Bigelow Date: March 24, 2014 Organization represented: Land owner

I, as a Private land/cabin owner in the area of the proposed **Energy Gateway South Transmission** Project in Duchesne County, have a great deal of concern over this Project going through the beautiful mountains of the Argyle Canyons where many families have had family cabins for generations, instead of going through BLM land with its open range and no private land/cabin owners in these particular areas for the following reasons:

I8a

1.It is hard for me to believe the EPA along with Fish&Game and Wildlife Resources are willing, actually willing, to put the Sage Grouse and it's habitat *before and over* that of people, fellow human-beings, who have family cabins and personal property in the same area.

I8b

2.The Sage Grouse isn't even on the ESA listing...as of yet. They are only on a "waiting" list because other species, who are in more danger, are ahead of them.

3.The Sage Grouse has a *very wide* range area that covers 8, yes, 8 Western States. Washington, Eastern California, Utah, New Mexico, Colorado, Idaho, North Dakota and Montana along with Southern Alberta and Saskatchewan, Canada.

4.The Sage Grouse only lives 1-1 1/2 years and are then replaced by others. Many large trees in the proposed areas of the mountains have been there for 100's of years and are now being threatened by the project, in comparison.

5.The Sage Grouse will, of necessity, move out of the area during construction of the power lines then will move right back in after it is over. There will then be no threat to them by the towers or power lines. Cattle will also graze peacefully on BLM land under the power lines and near the towers for years to come.

I8c

6.The large monarch evergreen trees that are threatened to be destroyed permanently in the Argyle Canyons will take many, many years to grow others in their stead...if that would even happen if their species are destroyed in large masses. The Sage Brush can be reseeded and in a very few years will flourish once again.

7.The project will leave a very large foot print, or scar of destruction in the mountain area of the Argyle Canyons for years to come whereas, the sagebrush and grasses will cover rather quickly.

I8d

8.The area of Argyle Canyons effected buy the EGSTP is a *very* minuet distance in comparison to the many, many miles across two states, Wyoming and Utah, yet is very precious and important to the landowners that have beloved generational cabins in that particular area.

I8e

9.Why is it *so* necessary to take away such a small area from people, human-beings when the Sage Grouse has 8+ states and lower Canada to roam and flourish???

I8a Comment and route preference noted. Refer to Section 2.5.1.3, Screening and Comparing Alternatives, in the Final EIS. This section outlines the systematic analysis used to screen and compare alternatives, which was used to narrow the number of alternative routes and route variations for analysis and to determine the most environmentally acceptable alternative routes and route variations to be addressed in the EIS. The Agency Preferred Alternative on federal lands will be the alternative route or route variation the BLM, in coordination with the cooperating agencies, believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. Refer to Section 2.7.1 for more information.

I8b Comment noted. The current status of sage-grouse populations and threats to survival are described in Appendix J, Section J.6.2.1, under the heading Greater sage-grouse, Primary Threats to Survival. The impacts of transmission lines and other types of disturbance on sage-grouse were analyzed using the best scientific information. These are summarized in Section 3.2.8.4.3.

I8c Comment noted. Impacts on montane forest vegetation communities from Alternatives COUT-B and COUT-C are addressed in Section 3.2.5. Impacts from route variations are addressed in Appendix F. Impacts on visual resources are addressed in Section 3.2.18.

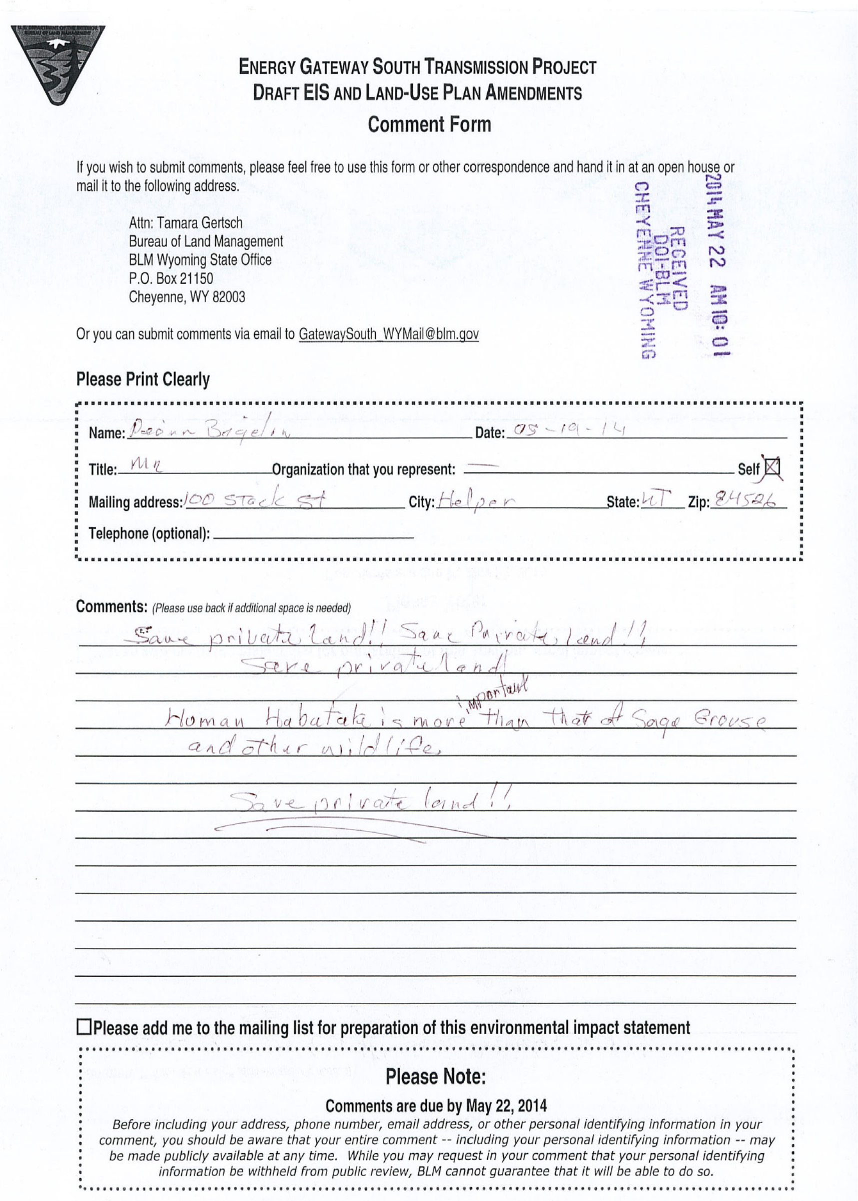
I8d Comment and route preference noted.

Based on comments received on the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

I8e See response to Comment I8b.

Comment(s)

I9 **Devin Bigelow**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

2014 MAY 22 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Devin Bigelow Date: 05-19-14
Title: Mr Organization that you represent: — Self ☒
Mailing address: 100 Stack St City: Helper State: UT Zip: 84526
Telephone (optional): ______

Comments: *(Please use back if additional space is needed)*

Save private land!! Save Private land!!
Save private land!

I9a Homan Habatate is more important than that of Sage Grouse and other wildlife.

Save private land!!

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

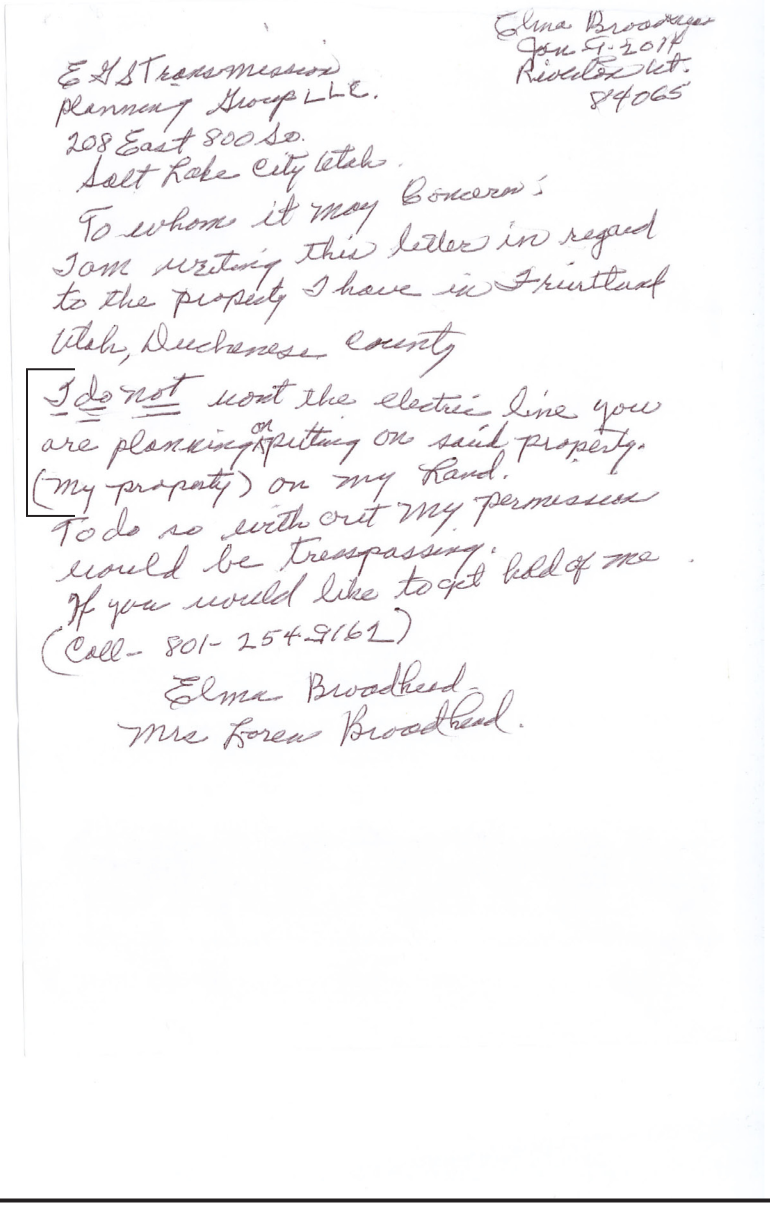
Response(s)

I9a Comment noted.

Comment(s)	Response(s)
I10 **Janet Blytheway**	
From: **Janet Blytheway** <jgil99@aol.com> Date: Sat, Apr 26, 2014 at 8:53 AM Subject: Fwd: Energy Gateway South Transmission Project To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov> Sent from my iPad Begin forwarded message: **From:** Janet Bytheway <jgil99@aol.com> **Date:** April 24, 2014 at 10:28:29 AM MDT **To:** "GatewaysouthWYmail@blm.gov" <GatewaysouthWYmail@blm.gov> **Subject: Energy Gateway South Transmission Project**	
I10a As a resident of Milburn, Ut my husband and I are opposed to the suggested route of the electrical transmission lines to be built through the Fairview valley. ***We support the alternate route suggested by the BLM.***	I10a Comment and route preference noted.
Sent from my iPad	

Comment(s)

I11 **Elma Broadhead**



Elma Broadhead
Jun 9-2014
Riverton Ut.
84065

E G S Transmission
Planning Group LLC.
208 East 800 So.
Salt Lake City Utah.

To whom it may Concern:

I am writing this letter in regard to the property I have in Fruitland Utah, Duchenese county

I11a I do not want the electric line you are planning or putting on said property. (my property) on my Land.

To do so with out my permission would be trespassing. If you would like to get hold of me (Call- 801-254-9162)

Elma Broadhead
Mrs Loren Broadhead.

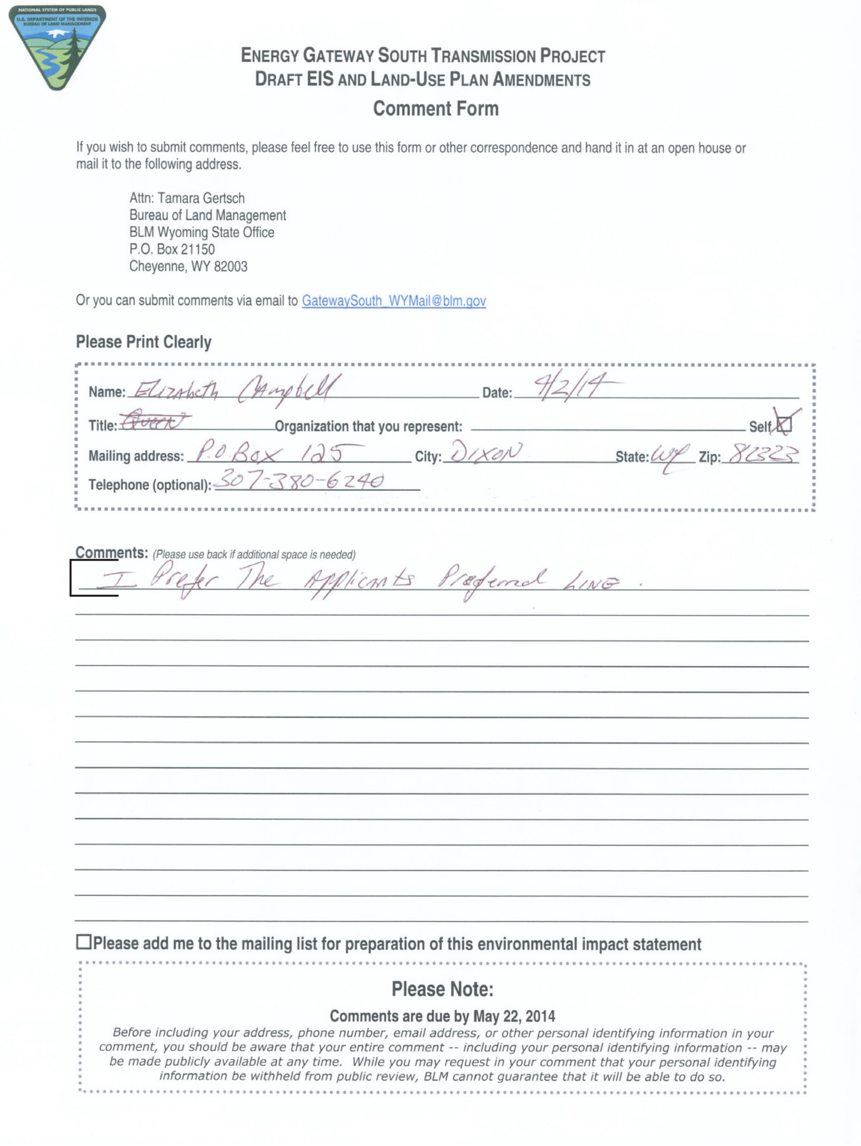
Response(s)

I11a Comment noted.

Comment(s)

Response(s)

I12 **Elizabeth Campbell**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Elizabeth Campbell Date: 4/2/14
Title: ~~Queen~~ Organization that you represent: ________ Self ☒
Mailing address: P.O Box 125 City: Dixon State: WY Zip: 82323
Telephone (optional): 307-380-6240

Comments: *(Please use back if additional space is needed)*

I12a I Prefer The Applicants Preferred Line.

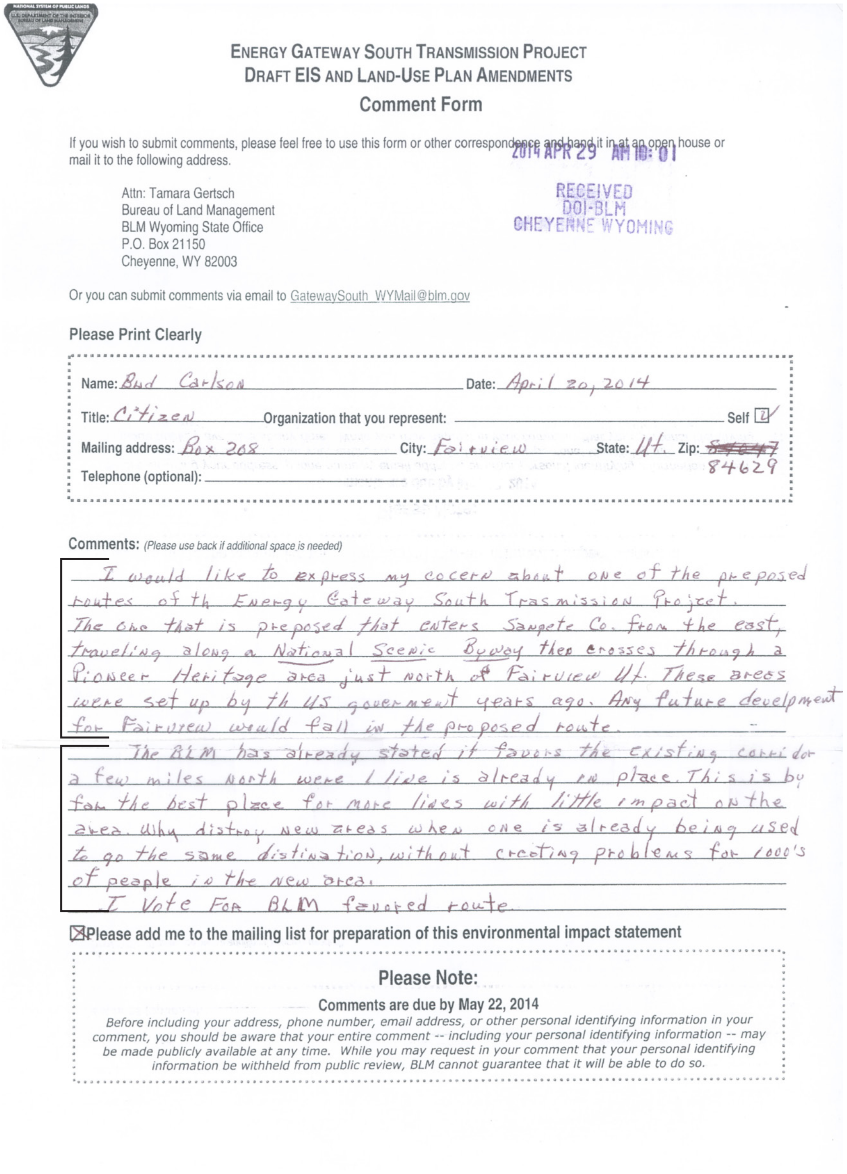
☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I12a Comment and route preference noted.

Comment(s)

I13 **Bud Carlson**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

2014 APR 29 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Bud Carlson Date: April 20, 2014
Title: Citizen Organization that you represent: Self ☑
Mailing address: Box 208 City: Fairview State: Ut. Zip: ~~84647~~ 84629
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I13a I would like to express my cocern about one of the preposed routes of th Energy Gateway South Trasmission Project. The one that is preposed that enters Sanpete Co. from the east, traveling along a National Scenic Byway then crosses through a Pioneer Heritage area just north of Fairview Ut. These areas were set up by th US goverment years ago. Any future development for Fairview would fall in the proposed route.

I13b The BLM has already stated it favors the existing corridor a few miles north were I live is already in place. This is by far the best place for more lines with little impact on the area. Why distroy new areas when one is already being used to go the same distination, without creating problems for 1000's of people in the new area.

I Vote For BLM favored route.

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I13a Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I13b Comment and route preference noted.

Comment(s)

Response(s)

I14 **Carolyn Carter – Carter Family Trust**

From: **carolyn carter** <carolync60@gmail.com>
Date: Mon, May 19, 2014 at 6:44 PM
Subject: Fwd: Comments regarding the Energy Gateway South Transmission Project
To: GatewaySouth_WYMail@blm.gov
Cc: carolyn carter <carolync60@gmail.com>, "lesismore99@msn.com"
<lesismore99@msn.com>

Hello Tamara,

It was a pleasure to talk with you and others involved in this project at the open house in Nephi. Sorry the about the delay in our comments to go with the Map we left with you. We have been dealing with family health issue.

Please find attached the Comments Form and the comments from Dolores Carter and the other trust members.

I hope you find these understandable and informative along with the map of our property that you have.

Please let me know you received this email with the two attachments. I will be accepting the correspondence for my mother and other trust members.

You can call me on my Cell Phone 435-632-6308 if you need any clarification on the attached comments.

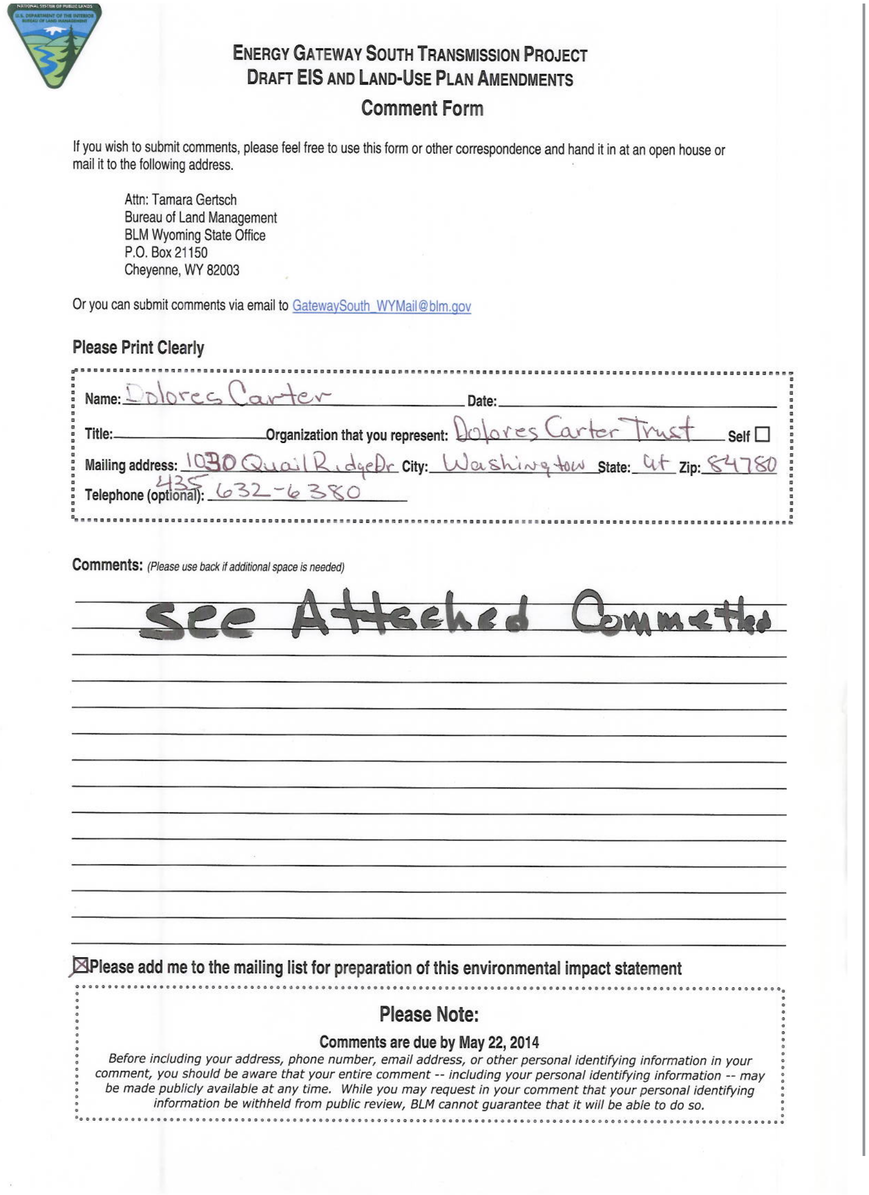
Thank you again,

Carolyn Stuercke
Daughter of Dolores Carter
and Power of Attorney

Comment(s)

Response(s)

I14 **Carolyn Carter – Carter Family Trust (cont.)**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Dolores Carter Date:
Title: Organization that you represent: Dolores Carter Trust Self ☐
Mailing address: 1030 Quail Ridge Dr City: Washingtow State: Ut Zip: 84780
Telephone (optional): 435 632-6380

Comments: *(Please use back if additional space is needed)*

See Attached Commetted

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Comment(s)

I14 **Carolyn Carter – Carter Family Trust (cont.)**

Comments Regarding the

Gateway South Transmission Project

Draft EIS and Land- Use Plan Amendments

From Dolores Carter Trust

I14a 1- We would suggest that the line follow the existing corridor to the north of our property to centralize the power lines.

I14b 2- We would like to point out the natural springs in the northwest corner of our property.

I14c 3- We would like to point out that our property is a place where wild geese land and nest near the springs.

I14d 4- We as a family have an ongoing plan to improve the property which began 5 years ago with one structure completed and another under construction. Please refer to the map we gave you during the open house for proposed future structures.

I14e 5- We would recommend that you look to the south for areas to cross where it is still undeveloped farmland with no current improvements currently in process.

I14f 6- As you can see from the Map the existing plan divides our property into two triangles going almost from corner to corner. We would suggest a less invasive route through our property.

I14g 7- If no other options exist we would suggest going down the south property line to the end or our property and then heading towards the substation. This would then miss the springs in the northwest corner that feed Burstyn pond that provide habituate for the geese. It would also follow a route that does not have development currently or in a planning stage.

8- It is important for us as a family to preserve the land for the use and education of our posterity to assure their understanding of the importance of the earth. We are committed to a safe and clean I14h environment for our family. We also understand the need to support progress in a responsible way. We feel very strongly that our needs to provide safety for our family and livestock should be considered in the placement of this line.

Thank you for accepting our comments and it is our hope and desire that you will reconsider your current route as a result of this information.

Sincerely,

The Carter Family Trust

Response(s)

I14a Comment and route preference noted.

I14b Comment noted. All information for natural springs and all other water resources was acquired from state water engineers and is the most current information available. Potential direct and indirect impacts on water resources are described in Section 3.2.4. Surveys for wetlands and other waters would be completed in all areas with the potential to be affected by the Project, and water resources such as springs would be avoided to the extent practicable under Design Feature 9. Any impacts on water resources would require authorization by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

I14c Comment noted. Impacts on migratory birds are analyzed in Section 3.2.9.

I14d Comment and route preference noted. The location of the alternative route was adjusted where possible to follow section lines and existing features to avoid dividing this parcel.

I14e Comment and route preference noted.

I14f Comment and route preference noted. The location of the alternative route was adjusted where possible to follow section lines and existing features to avoid dividing this parcel.

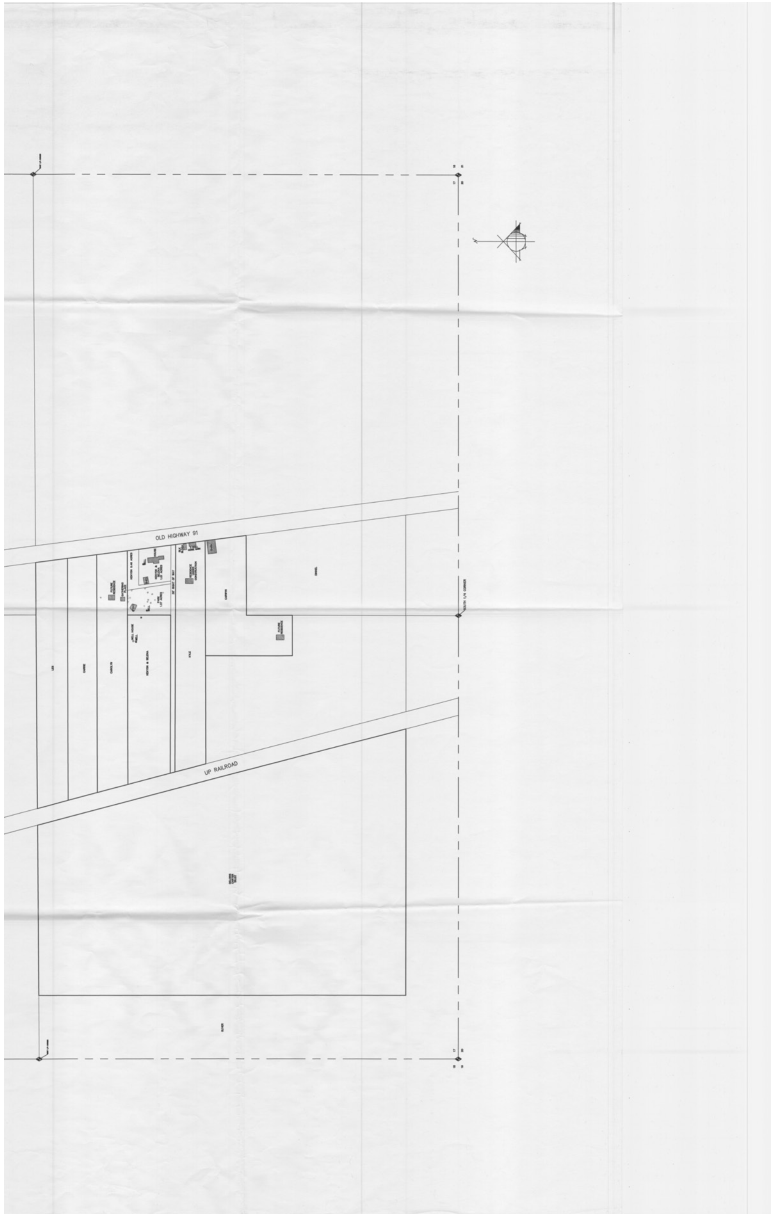
I14g Comment and route preference noted.

I14h Comment and route preference noted.

Comment(s)

Response(s)

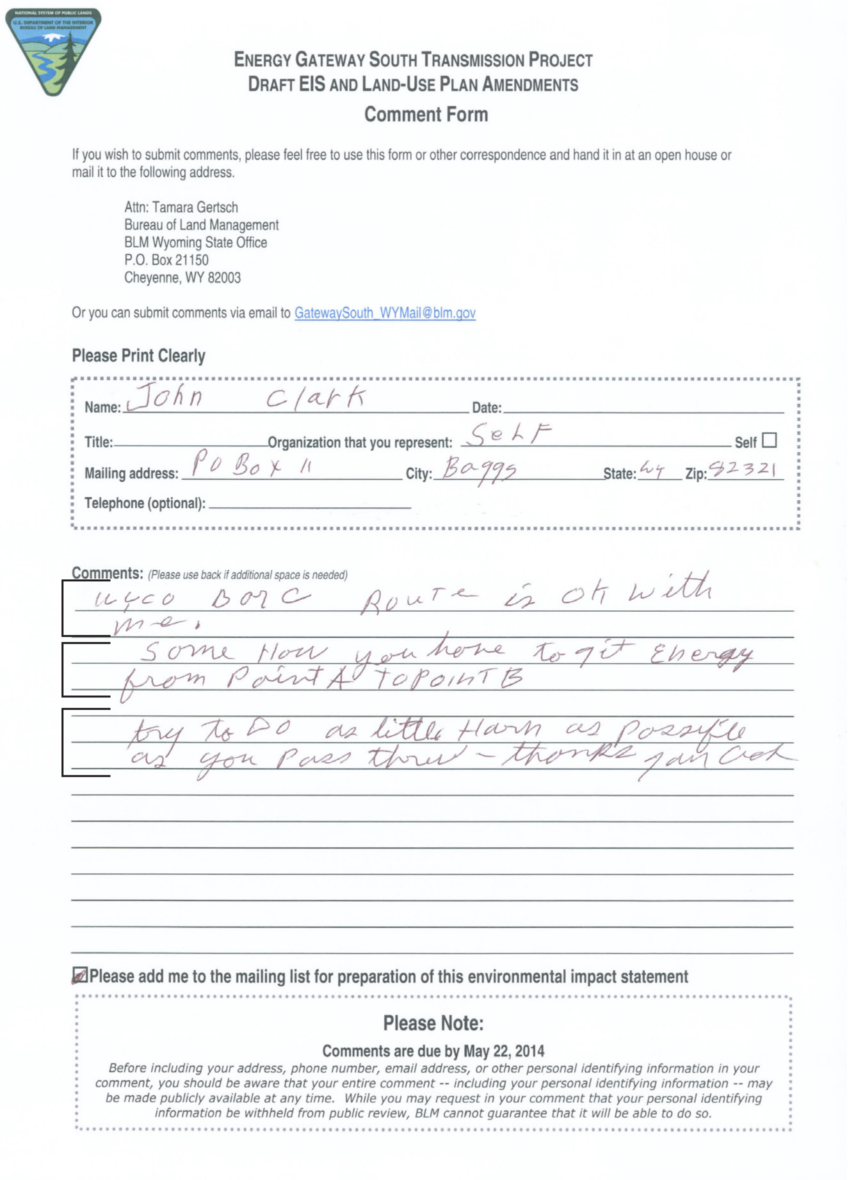
I14 **Carolyn Carter – Carter Family Trust (cont.)**



Comment(s)

Response(s)

I15 **John Clark**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: John Clark Date:

Title: Organization that you represent: SelF Self ☐

Mailing address: PO Box 11 City: Baggs State: wy Zip: 82321

Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I15a wyco BOrC Route is ok with me.

I15b Some How you have to git Energy from Point A TO POINT B

I15c try To DO as little Harm as possible as you Pass thru – thanks John Clark

☑ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

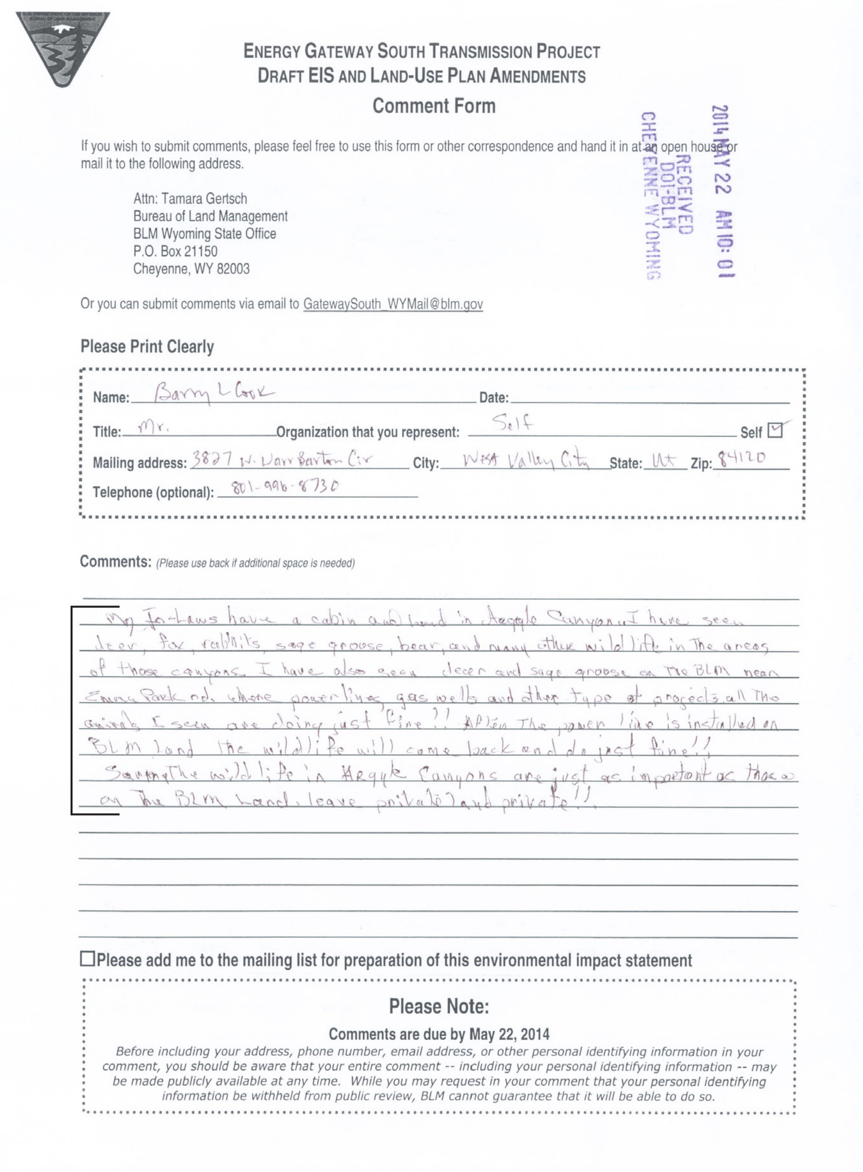
I15a Comment and route preference noted.

I15b Comment noted.

I15c Comment noted.

Comment(s)

I16 | **Barry L. Cook**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

2014 MAY 22 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Barry L Cook Date:
Title: Mr. Organization that you represent: Self Self ☑
Mailing address: 3827 W. Varr Barton Cir City: West Valley City State: Ut Zip: 84120
Telephone (optional): 801-996-8730

Comments: *(Please use back if additional space is needed)*

I16a My In-Laws have a cabin and land in Argyle Canyon. I have seen deer, fox, rabbits, sage grouse, bear, and many other wild life in The areas of those canyons. I have also seen deer and sage grouse on The BLM near Emma Park rd. where power lines, gas wells and other type of projects all The animals I seen are doing just fine!! After The power line is installed on BLM land the wildlife will come back and do just fine!! Saying the wild life in Argyle Canyons are just as important as those on The BLM Land. leave private land private!!

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

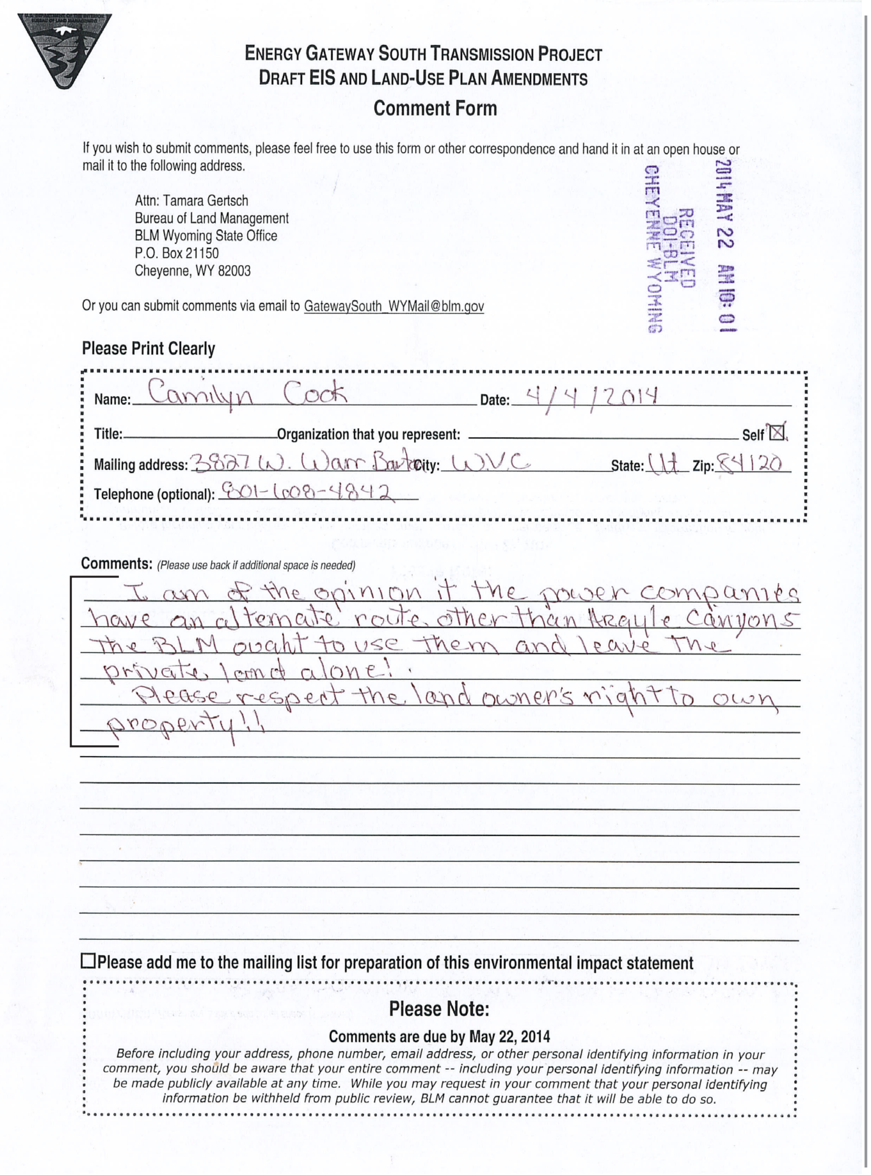
Response(s)

I16a Comment and route preference noted.

Comment(s)

Response(s)

I17 **Camilyn Cook**



Energy Gateway South Transmission Project
Draft EIS and Land-Use Plan Amendments
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: Camilyn Cook Date: 4/4/2014
Title: Organization that you represent: Self ☒
Mailing address: 3827 W. Warr Bark City: W.V.C State: Ut Zip: 84120
Telephone (optional): 801-608-4842

Comments: *(Please use back if additional space is needed)*

I17a I am of the opinion if the power companies have an alternate route other than Argyle Canyons The BLM ought to use them and leave the private land alone!.

Please respect the land owner's right to own property!!

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

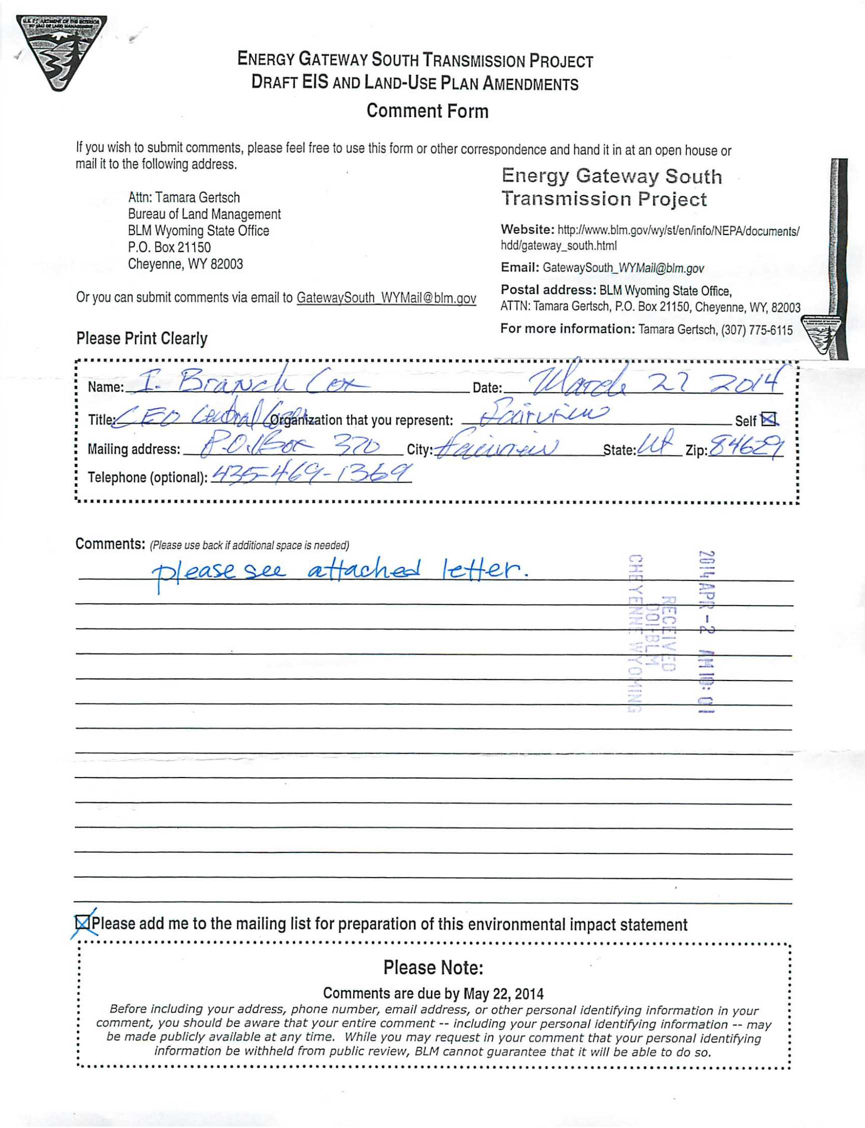
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I17a Comment and route preference noted.

Comment(s)

Response(s)

I18 **I. Branch Cox**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Energy Gateway South
Transmission Project

Website: http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html
Email: GatewaySouth_WYMail@blm.gov
Postal address: BLM Wyoming State Office, ATTN: Tamara Gertsch, P.O. Box 21150, Cheyenne, WY, 82003
For more information: Tamara Gertsch, (307) 775-6115

Please Print Clearly

Name: I. Branch Cox Date: March 27 2014
Title: CEO Central Corp Organization that you represent: Fairview Self ☒
Mailing address: P.O. Box 370 City: Fairview State: Ut Zip: 84629
Telephone (optional): 435-469-1369

Comments: *(Please use back if additional space is needed)*

please see attached letter.

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 APR -2 AM 10: 01

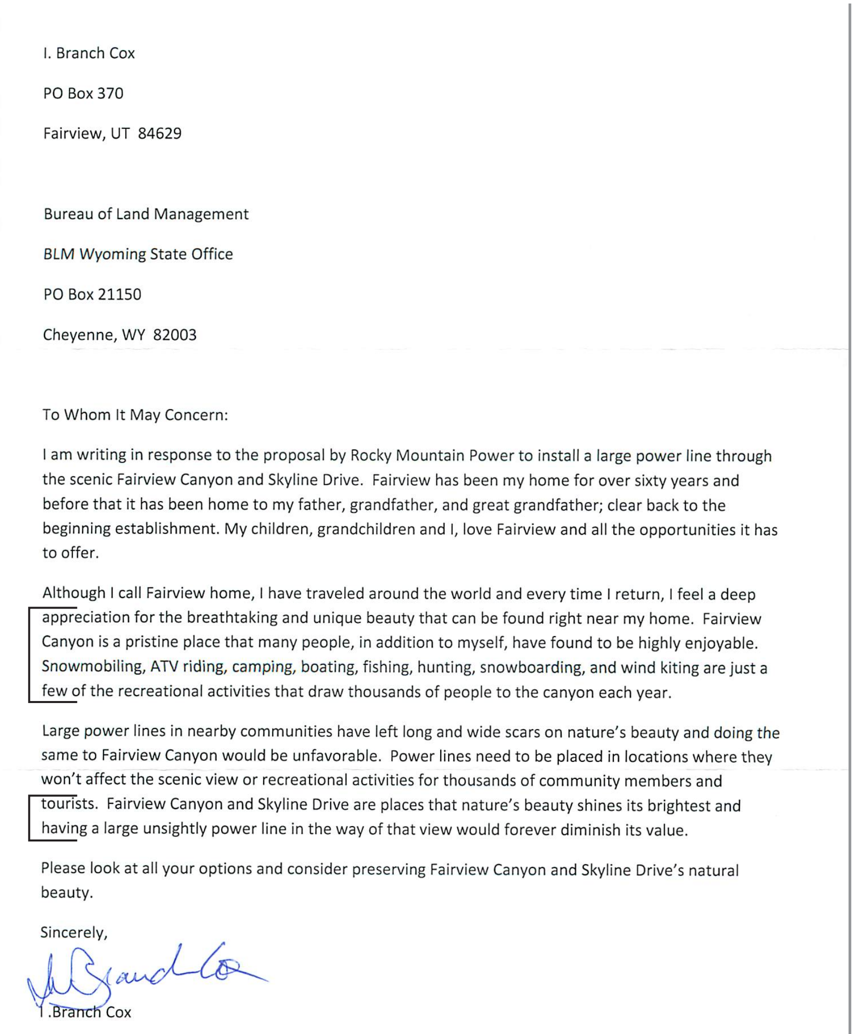
☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Comment(s)

Response(s)

I18 **I. Branch Cox (cont.)**



I. Branch Cox

PO Box 370

Fairview, UT 84629

Bureau of Land Management

BLM Wyoming State Office

PO Box 21150

Cheyenne, WY 82003

To Whom It May Concern:

I am writing in response to the proposal by Rocky Mountain Power to install a large power line through the scenic Fairview Canyon and Skyline Drive. Fairview has been my home for over sixty years and before that it has been home to my father, grandfather, and great grandfather; clear back to the beginning establishment. My children, grandchildren and I, love Fairview and all the opportunities it has to offer.

I18a Although I call Fairview home, I have traveled around the world and every time I return, I feel a deep appreciation for the breathtaking and unique beauty that can be found right near my home. Fairview Canyon is a pristine place that many people, in addition to myself, have found to be highly enjoyable. Snowmobiling, ATV riding, camping, boating, fishing, hunting, snowboarding, and wind kiting are just a few of the recreational activities that draw thousands of people to the canyon each year.

I18b Large power lines in nearby communities have left long and wide scars on nature's beauty and doing the same to Fairview Canyon would be unfavorable. Power lines need to be placed in locations where they won't affect the scenic view or recreational activities for thousands of community members and tourists. Fairview Canyon and Skyline Drive are places that nature's beauty shines its brightest and having a large unsightly power line in the way of that view would forever diminish its value.

Please look at all your options and consider preserving Fairview Canyon and Skyline Drive's natural beauty.

Sincerely,

I .Branch Cox

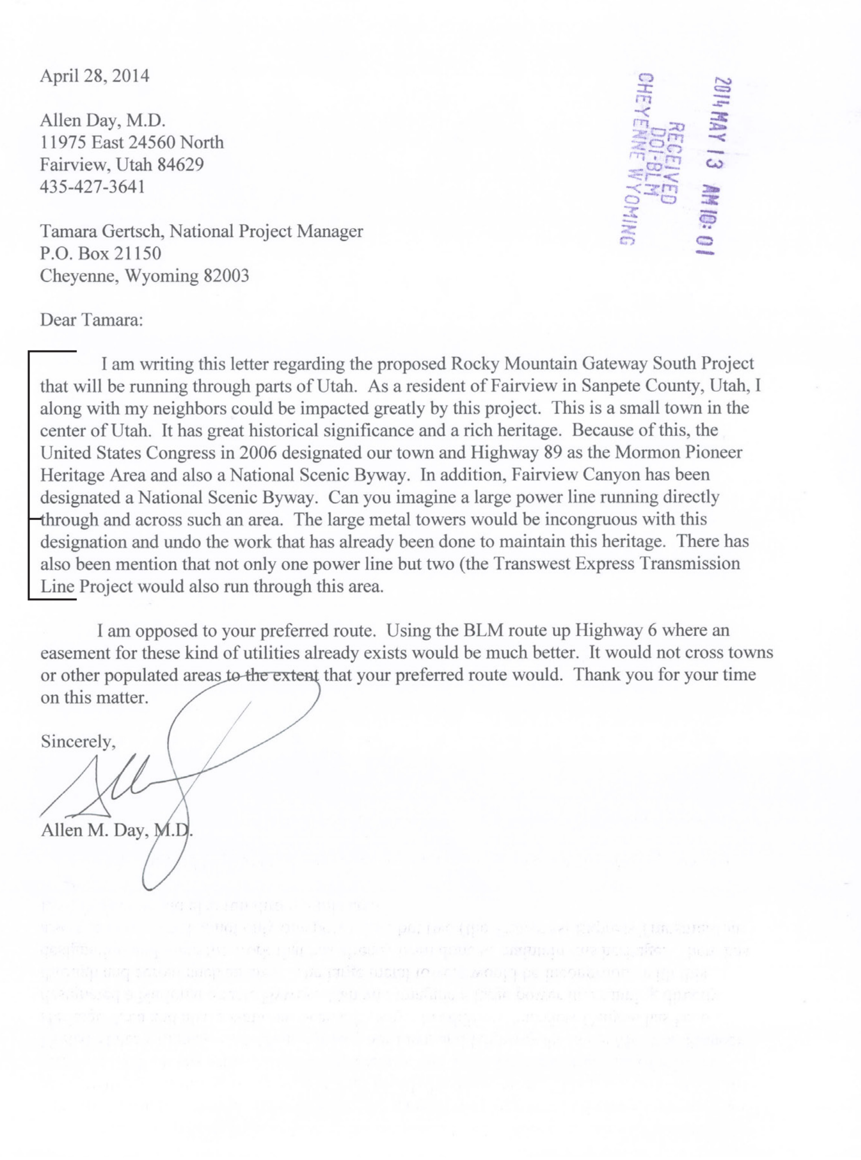
I18a Comment and route preference noted.

I18b Due to the sensitivity of views from these and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway and Skyline Drive, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts and other resource effects, these alternative routes and route variations were not selected as the Agency Preferred Alternative.

Comment(s)

Response(s)

I19 **Allen M. Day, M.D.**



April 28, 2014

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Allen Day, M.D.
11975 East 24560 North
Fairview, Utah 84629
435-427-3641

Tamara Gertsch, National Project Manager
P.O. Box 21150
Cheyenne, Wyoming 82003

Dear Tamara:

I19a I am writing this letter regarding the proposed Rocky Mountain Gateway South Project that will be running through parts of Utah. As a resident of Fairview in Sanpete County, Utah, I along with my neighbors could be impacted greatly by this project. This is a small town in the center of Utah. It has great historical significance and a rich heritage. Because of this, the United States Congress in 2006 designated our town and Highway 89 as the Mormon Pioneer Heritage Area and also a National Scenic Byway. In addition, Fairview Canyon has been designated a National Scenic Byway. Can you imagine a large power line running directly

I19b through and across such an area. The large metal towers would be incongruous with this designation and undo the work that has already been done to maintain this heritage. There has also been mention that not only one power line but two (the Transwest Express Transmission Line Project would also run through this area.

I am opposed to your preferred route. Using the BLM route up Highway 6 where an easement for these kind of utilities already exists would be much better. It would not cross towns or other populated areas to the extent that your preferred route would. Thank you for your time on this matter.

Sincerely,

Allen M. Day, M.D.

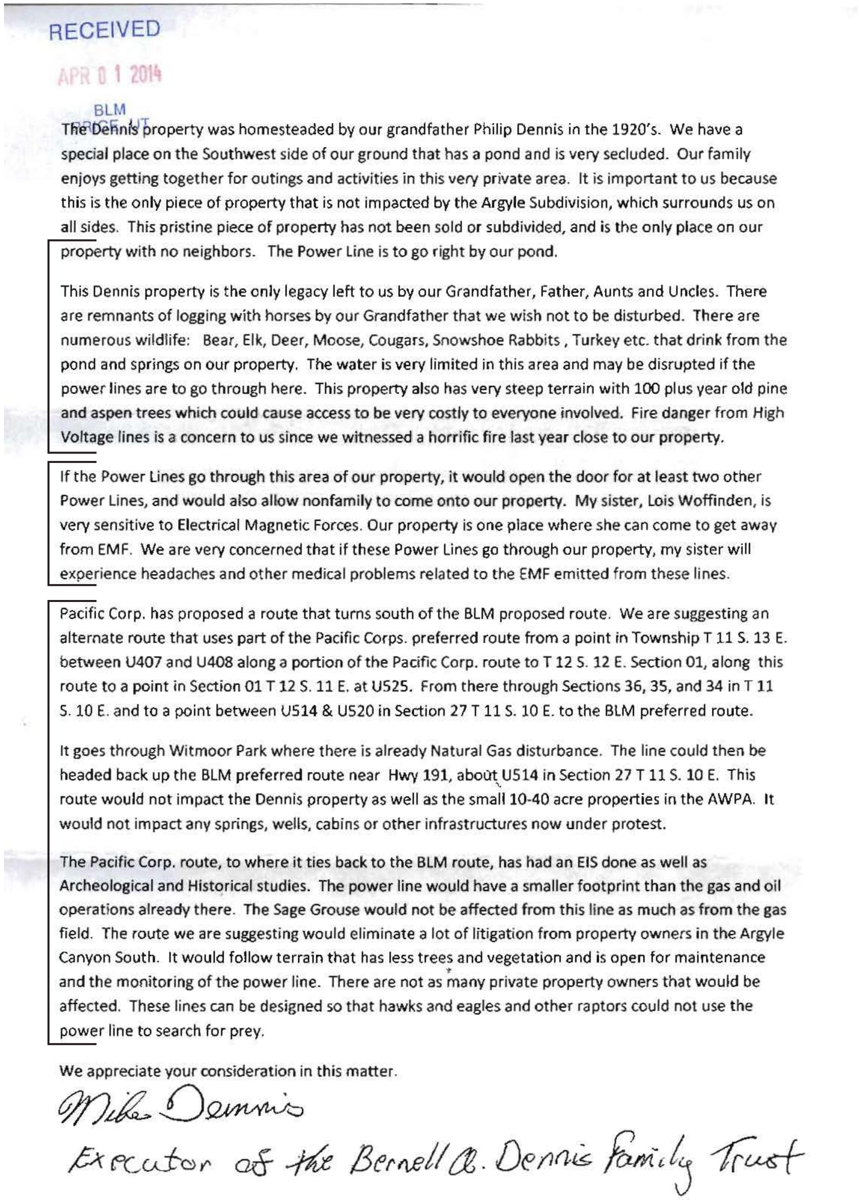
I19a Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I19b Based on high impacts on views from residences and the scenic byway in this natural setting, in context with other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

Response(s)

I20 **Mike Dennis – Bernell A. Dennis Family Trust**



RECEIVED
APR 0 1 2014
BLM
PRICE, UT

The Dennis property was homesteaded by our grandfather Philip Dennis in the 1920's. We have a special place on the Southwest side of our ground that has a pond and is very secluded. Our family enjoys getting together for outings and activities in this very private area. It is important to us because this is the only piece of property that is not impacted by the Argyle Subdivision, which surrounds us on all sides. This pristine piece of property has not been sold or subdivided, and is the only place on our property with no neighbors. The Power Line is to go right by our pond.

I20a This Dennis property is the only legacy left to us by our Grandfather, Father, Aunts and Uncles. There are remnants of logging with horses by our Grandfather that we wish not to be disturbed. There are numerous wildlife: Bear, Elk, Deer, Moose, Cougars, Snowshoe Rabbits , Turkey etc. that drink from the pond and springs on our property. The water is very limited in this area and may be disrupted if the power lines are to go through here. This property also has very steep terrain with 100 plus year old pine and aspen trees which could cause access to be very costly to everyone involved. Fire danger from High Voltage lines is a concern to us since we witnessed a horrific fire last year close to our property.

I20b If the Power Lines go through this area of our property, it would open the door for at least two other Power Lines, and would also allow nonfamily to come onto our property. My sister, Lois Woffinden, is very sensitive to Electrical Magnetic Forces. Our property is one place where she can come to get away from EMF. We are very concerned that if these Power Lines go through our property, my sister will experience headaches and other medical problems related to the EMF emitted from these lines.

I20c Pacific Corp. has proposed a route that turns south of the BLM proposed route. We are suggesting an alternate route that uses part of the Pacific Corps. preferred route from a point in Township T 11 S. 13 E. between U407 and U408 along a portion of the Pacific Corp. route to T 12 S. 12 E. Section 01, along this route to a point in Section 01 T 12 S. 11 E. at U525. From there through Sections 36, 35, and 34 in T 11 S. 10 E. and to a point between U514 & U520 in Section 27 T 11 S. 10 E. to the BLM preferred route.

It goes through Witmoor Park where there is already Natural Gas disturbance. The line could then be headed back up the BLM preferred route near Hwy 191, about U514 in Section 27 T 11 S. 10 E. This route would not impact the Dennis property as well as the small 10-40 acre properties in the AWPA. It would not impact any springs, wells, cabins or other infrastructures now under protest.

The Pacific Corp. route, to where it ties back to the BLM route, has had an EIS done as well as Archeological and Historical studies. The power line would have a smaller footprint than the gas and oil operations already there. The Sage Grouse would not be affected from this line as much as from the gas field. The route we are suggesting would eliminate a lot of litigation from property owners in the Argyle Canyon South. It would follow terrain that has less trees and vegetation and is open for maintenance and the monitoring of the power line. There are not as many private property owners that would be affected. These lines can be designed so that hawks and eagles and other raptors could not use the power line to search for prey.

We appreciate your consideration in this matter.

Mike Dennis

Executor of the Bernell A. Dennis Family Trust

I20a Potential impacts on wildlife species resulting from transmission lines are disclosed in Sections 3.2.8.4.3 and 3.2.7.4.3. Potential impacts on fire and fire ecology are presented in Section 3.2.21.

I20b The potential for other power lines is discussed in Chapter 4 of the EIS.

Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use, which would be carried forward into the Plan of Development (POD). The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

The Applicant is aware of concerns regarding possible health risks from electromagnetic fields (EMF); however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP), for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

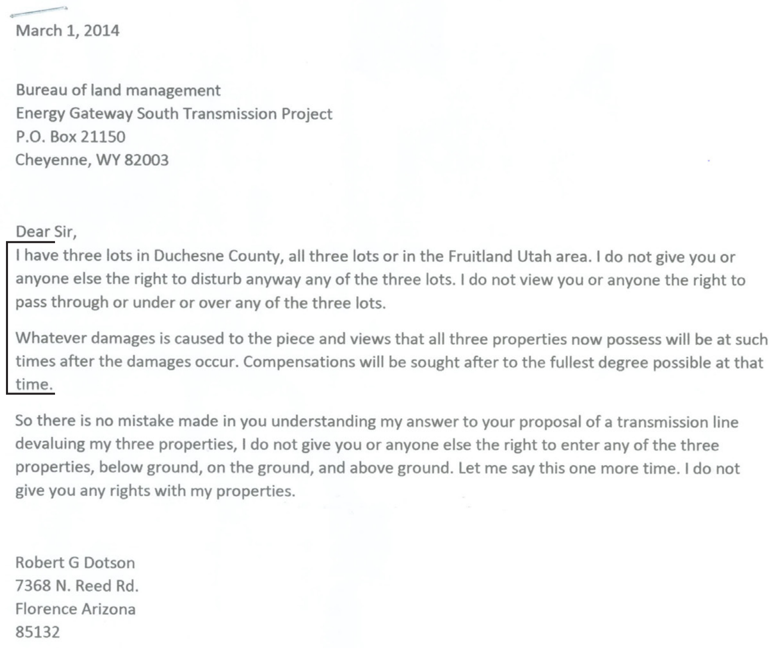
There are also concerns about potential sensitivity to EMF, a condition frequently called electromagnetic hypersensitivity (EHS). According to the WHO's Fact Sheet on EHS, a number of research studies "indicate that EHS individuals cannot detect EMF" and in scientific studies EHS individuals' "symptoms were not correlated with EMF exposure." While the Fact Sheet recognizes that the symptoms of EHS individuals may be real, they are likely unrelated to EMF.

I20c Comment and route preference noted. Based on comments received on the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

Comment(s)

Response(s)

I21 **Robert G. Dotson**



March 1, 2014

Bureau of land management
Energy Gateway South Transmission Project
P.O. Box 21150
Cheyenne, WY 82003

Dear Sir,

I21a I have three lots in Duchesne County, all three lots or in the Fruitland Utah area. I do not give you or anyone else the right to disturb anyway any of the three lots. I do not view you or anyone the right to pass through or under or over any of the three lots.

Whatever damages is caused to the piece and views that all three properties now possess will be at such times after the damages occur. Compensations will be sought after to the fullest degree possible at that time.

So there is no mistake made in you understanding my answer to your proposal of a transmission line devaluing my three properties, I do not give you or anyone else the right to enter any of the three properties, below ground, on the ground, and above ground. Let me say this one more time. I do not give you any rights with my properties.

Robert G Dotson
7368 N. Reed Rd.
Florence Arizona
85132

I21a Comment and route preference noted.

Comment(s)

Response(s)

I22 **Janet Dowland**

From: **Janet** <RANJANFAM@msn.com>
Date: Wed, Apr 16, 2014 at 12:16 PM
Subject: Rocky Mountain Gateway South Project
To: Gatewaysouth_WYMail@blm.gov

Dear Tamara,

I22a Recently I have been informed a power project that could come though our community. I live in Fairview Utah, which is a the gateway to the Skyline drive. The proposed plan would bring power lines down through our pristine canyon and through the property of many of my neighbors. This would be tragic. Our area is known for its beauty and recreational opportunities from camping, fishing hunting and recreation. The power line project would take a great deal away from the natural beauty of our area, which might I add is scenic byway. The construction of the project would have a tragic effect on the canyons stability. I have also been very concerned about the impact on wildlife and our wilderness areas. I am also very concerned about the EMF Pollution and its effect on people and livestock in our area.

I22b I am writing to plead with the administrators to consider the BLM alternate route which would greatly mitigate the impact of this project in our area. We encourage all those involved to follow the Route proposed by the BLM which goes down the north side of Highway 6 from Helper, then south at Thistle and crosses over to Nephi. The easements already exist along the corridor.

Please protect the beauty, economy and historical aspects of our area.

With great hope of a proper decision in this matter,

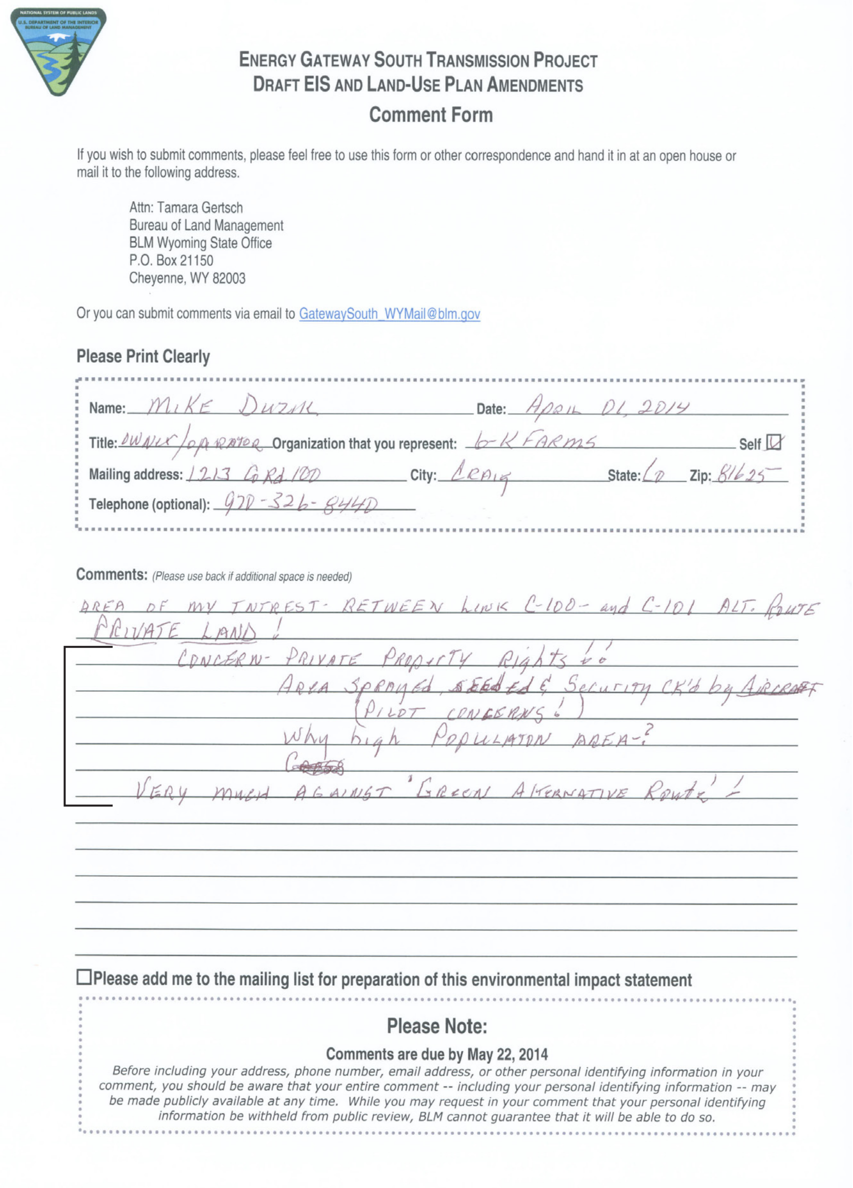
Janet Dowland
Fairview Utah Resident

I22a The EIS addresses the impacts on the Skyline scenic byway and other recreation activities in Section 3.2.12; on wildlife resources in Sections 3.2.7 and 3.2.8; on wilderness areas in Section 3.2.16; and of EMF in Section 3.2.23.

I22b Comment and route preference noted.

Comment(s)

I23 **Mike Duzik**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: MIKE DUZIK Date: April 01, 2014
Title: OWNER/OPERATOR Organization that you represent: 6-K FARMS Self ☑
Mailing address: 1213 CoRd 100 City: Craig State: CO Zip: 81625
Telephone (optional): 970-326-8440

Comments: *(Please use back if additional space is needed)*

AREA OF MY INTREST - BETWEEN LINK C-100 - and C-101 ALT. ROUTE
PRIVATE LAND !

I23a

CONCERN - PRIVATE PROPERTY RIGHTS !!
AREA SPRAYED, SEEDED & SECURITY CK'D BY AIRCRAFT
(PILOT CONCERNS !)
WHY HIGH POPULATION AREA ?
[illegible]
VERY MUCH AGAINST 'GREEN ALTERNATIVE ROUTE' !

☐ **Please add me to the mailing list for preparation of this environmental impact statement**

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I23a

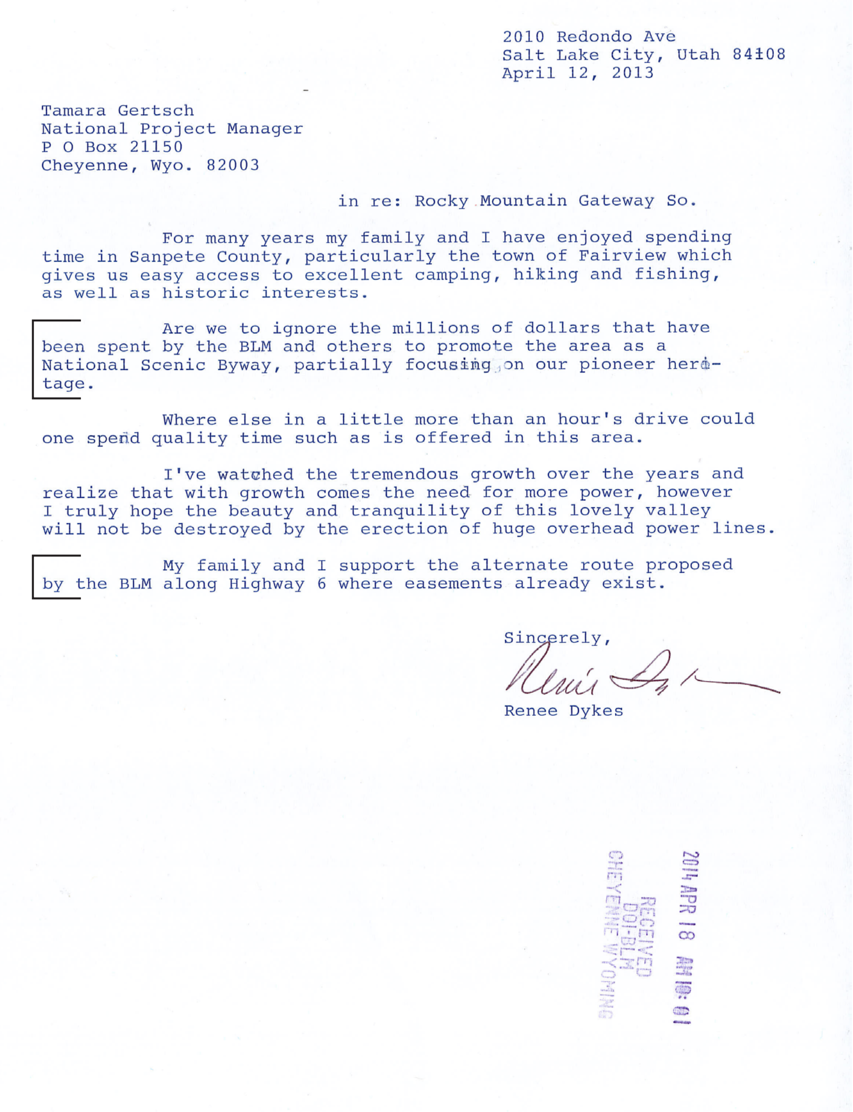
Comment and route preference noted. Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

The Agency Preferred Alternative on federal lands will be the alternative route the BLM, in coordination with the cooperating agencies, believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. Refer to Section 2.7.1 for more information.

Comment(s)

Response(s)

I24 **Renee Dykes**



2010 Redondo Ave
Salt Lake City, Utah 84108
April 12, 2013

Tamara Gertsch
National Project Manager
P O Box 21150
Cheyenne, Wyo. 82003

in re: Rocky Mountain Gateway So.

For many years my family and I have enjoyed spending time in Sanpete County, particularly the town of Fairview which gives us easy access to excellent camping, hiking and fishing, as well as historic interests.

I24a Are we to ignore the millions of dollars that have been spent by the BLM and others to promote the area as a National Scenic Byway, partially focusing on our pioneer heritage.

Where else in a little more than an hour's drive could one spend quality time such as is offered in this area.

I've watched the tremendous growth over the years and realize that with growth comes the need for more power, however I truly hope the beauty and tranquility of this lovely valley will not be destroyed by the erection of huge overhead power lines.

I24b My family and I support the alternate route proposed by the BLM along Highway 6 where easements already exist.

Sincerely,

Renee Dykes

2014 APR 18 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

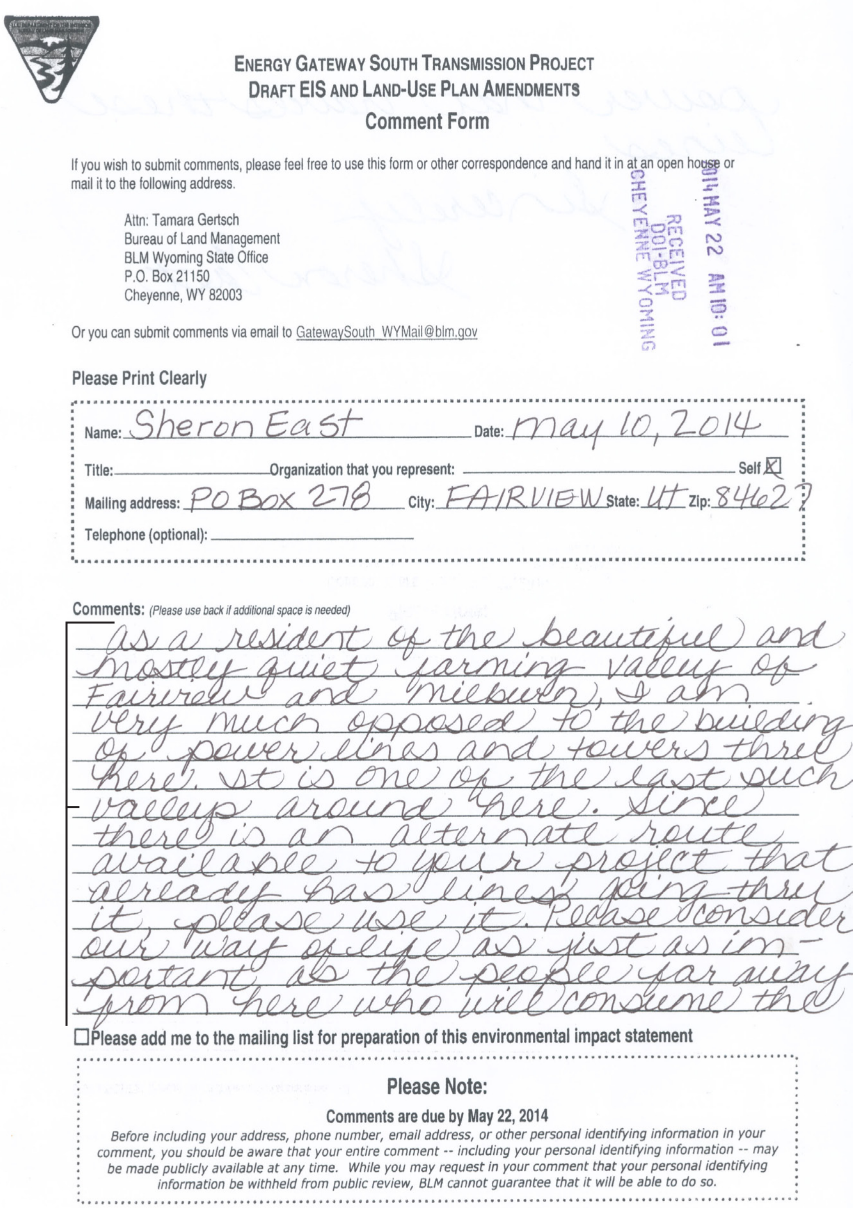
I24a Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I24b Comment and route preference noted.

Comment(s)

Response(s)

I25 **Sheron East**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 MAY 22 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: Sheron East Date: May 10, 2014
Title: Organization that you represent: Self ☒
Mailing address: PO Box 278 City: FAIRVIEW State: Ut Zip: 84627
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I25a
as a resident of the beautiful and mostly quiet farming valley of Fairview and Milburn, I am very much opposed to the building of power lines and towers thru here. It is one of the last such valleys around here.

I25b
Since there is an alternate route available to your project that already has lines going thru it, please use it. Please consider our way of life as just as important as the people far away from here who will consume the

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

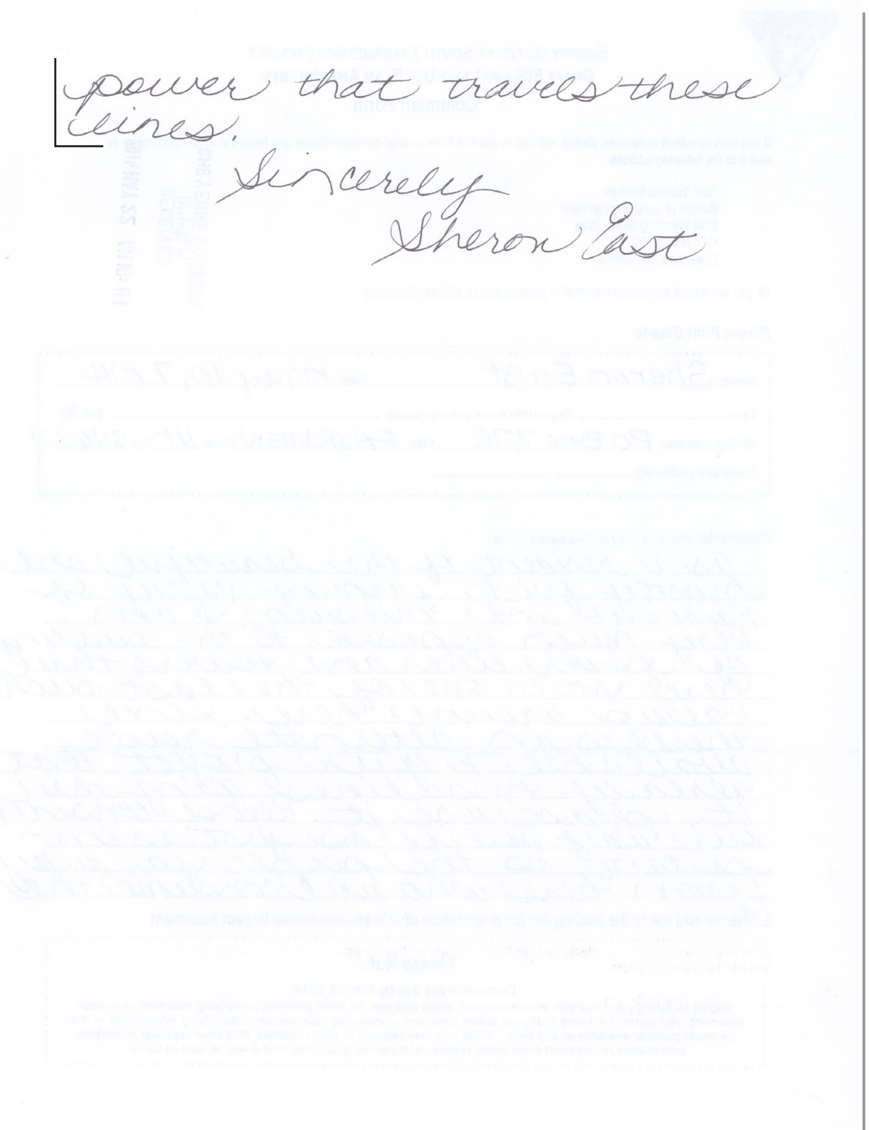
I25a Comment and route preference noted.

I25b Comment and route preference noted.

Comment(s)

Response(s)

I25	Sheron East (cont.)



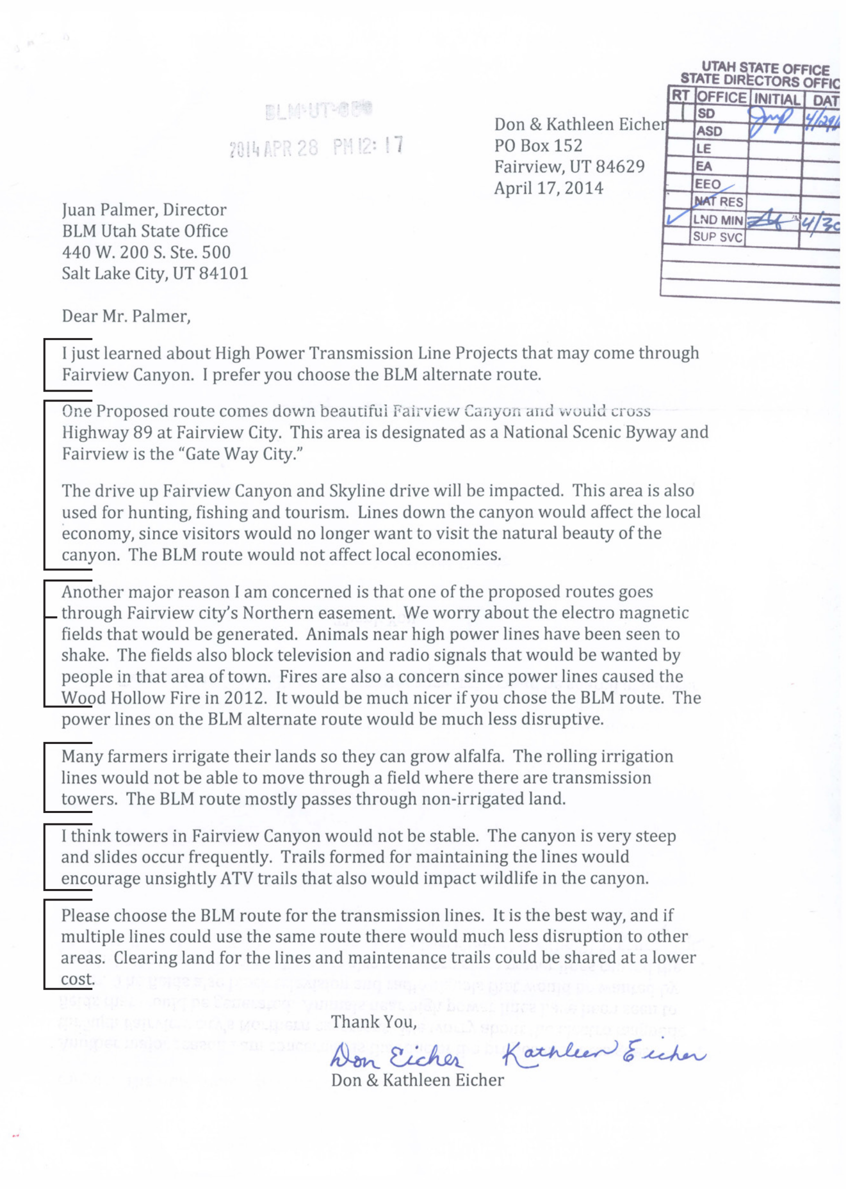
I25b power that travels these lines.

Sincerely
Sheron East

Comment(s)

Response(s)

I26 **Don and Kathleen Eicher – Letter Dated April 17, 2014**



BLM-UT-[illegible]
2014 APR 28 PM 12: 17

UTAH STATE OFFICE
STATE DIRECTORS OFFIC

RT	OFFICE	INITIAL	DAT
	SD		4/29/
	ASD		
	LE		
	EA		
	EEO		
	NAT RES		
✓	LND MIN		4/30
	SUP SVC		

Don & Kathleen Eicher
PO Box 152
Fairview, UT 84629
April 17, 2014

Juan Palmer, Director
BLM Utah State Office
440 W. 200 S. Ste. 500
Salt Lake City, UT 84101

Dear Mr. Palmer,

I26a I just learned about High Power Transmission Line Projects that may come through Fairview Canyon. I prefer you choose the BLM alternate route.

I26b One Proposed route comes down beautiful Fairview Canyon and would cross Highway 89 at Fairview City. This area is designated as a National Scenic Byway and Fairview is the "Gate Way City."

The drive up Fairview Canyon and Skyline drive will be impacted. This area is also used for hunting, fishing and tourism. Lines down the canyon would affect the local economy, since visitors would no longer want to visit the natural beauty of the canyon. The BLM route would not affect local economies.

I26c Another major reason I am concerned is that one of the proposed routes goes through Fairview city's Northern easement. I26d We worry about the electro magnetic fields that would be generated. Animals near high power lines have been seen to shake. The fields also block television and radio signals that would be wanted by people in that area of town. Fires are also a concern since power lines caused the Wood Hollow Fire in 2012. It would be much nicer if you chose the BLM route. The power lines on the BLM alternate route would be much less disruptive.

I26e Many farmers irrigate their lands so they can grow alfalfa. The rolling irrigation lines would not be able to move through a field where there are transmission towers. The BLM route mostly passes through non-irrigated land.

I26f I think towers in Fairview Canyon would not be stable. The canyon is very steep and slides occur frequently. Trails formed for maintaining the lines would encourage unsightly ATV trails that also would impact wildlife in the canyon.

I26g Please choose the BLM route for the transmission lines. It is the best way, and if multiple lines could use the same route there would much less disruption to other areas. Clearing land for the lines and maintenance trails could be shared at a lower cost.

Thank You,

Don Eicher Kathleen Eicher
Don & Kathleen Eicher

I26a Comment and route preference noted.

I26b Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I26c Based on data received and digitized from Fairview City, Utah, no Fairview City buffer zone area was identified. The BLM recognizes the corridor does cross lands zoned as sensitive land outside of Fairview City boundaries in Sanpete County as depicted on Fairview City's zoning map. All potential impacts related to the zoning and general plan management direction in Sanpete County are analyzed in Section 3.2.10; potential impacts on future development are analyzed in Section 3.2.10; and potential impacts on property values are analyzed in Section 3.2.20.

I26d The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.21.

The Project would adhere to NESC and Applicant's standard and industries best practices, which include practices to reduce potential fires.

I26e See next page for response to I26e.

I26f See next page for response to I26f.

I26g Comment and route preference noted.

Comment(s)

Response(s) - continued

I26 **Don and Kathleen Eicher – Letter Dated April 17, 2014 (cont.)**

I26e

To reduce potential impacts on agricultural irrigation systems, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.10.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

I26f

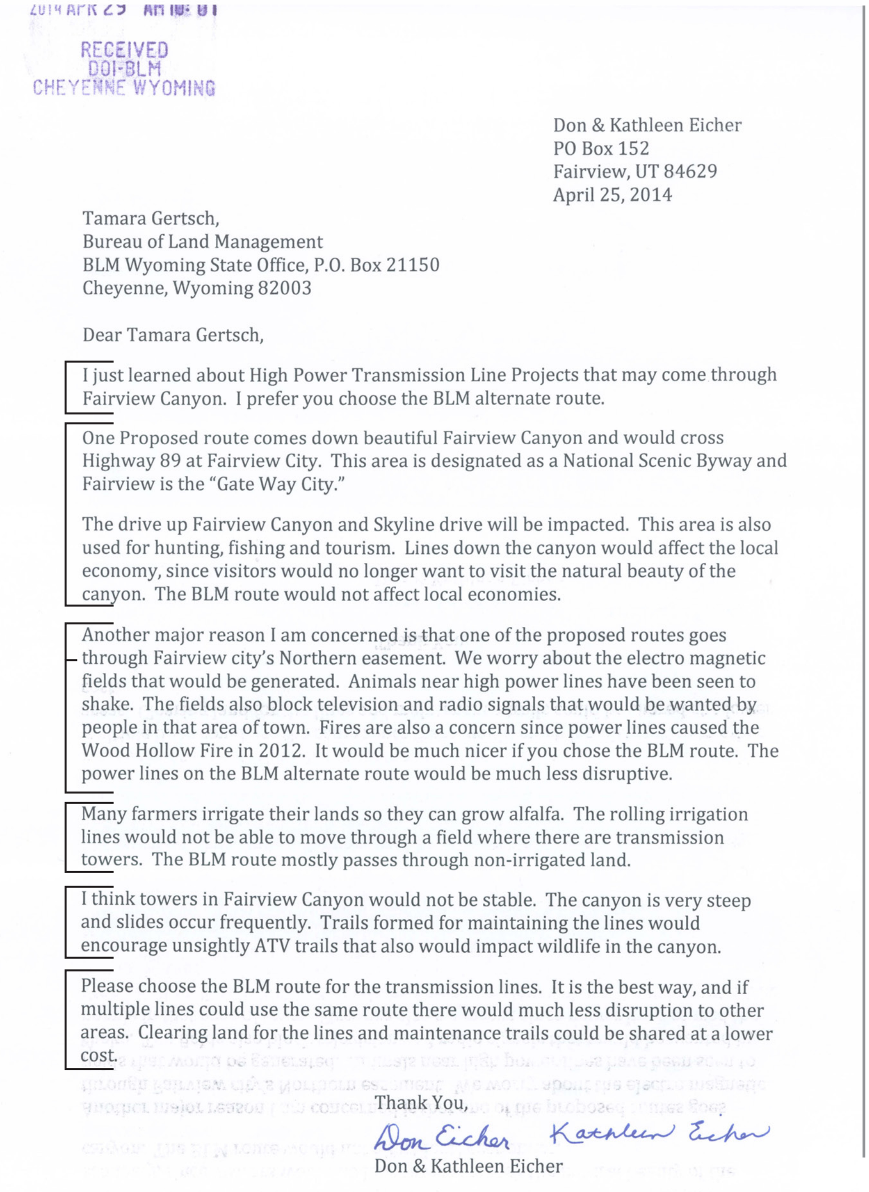
It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (all-terrain vehicles [ATV]), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

Comment(s)

I27 **Don and Kathleen Eicher – Letter Dated April 25, 2014**



2014 APR 29 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Don & Kathleen Eicher
PO Box 152
Fairview, UT 84629
April 25, 2014

Tamara Gertsch,
Bureau of Land Management
BLM Wyoming State Office, P.O. Box 21150
Cheyenne, Wyoming 82003

Dear Tamara Gertsch,

I27a I just learned about High Power Transmission Line Projects that may come through Fairview Canyon. I prefer you choose the BLM alternate route.

I27b One Proposed route comes down beautiful Fairview Canyon and would cross Highway 89 at Fairview City. This area is designated as a National Scenic Byway and Fairview is the "Gate Way City."

The drive up Fairview Canyon and Skyline drive will be impacted. This area is also used for hunting, fishing and tourism. Lines down the canyon would affect the local economy, since visitors would no longer want to visit the natural beauty of the canyon. The BLM route would not affect local economies.

I27c Another major reason I am concerned is that one of the proposed routes goes through Fairview city's Northern easement. I27d We worry about the electro magnetic fields that would be generated. Animals near high power lines have been seen to shake. The fields also block television and radio signals that would be wanted by people in that area of town. Fires are also a concern since power lines caused the Wood Hollow Fire in 2012. It would be much nicer if you chose the BLM route. The power lines on the BLM alternate route would be much less disruptive.

I27e Many farmers irrigate their lands so they can grow alfalfa. The rolling irrigation lines would not be able to move through a field where there are transmission towers. The BLM route mostly passes through non-irrigated land.

I27f I think towers in Fairview Canyon would not be stable. The canyon is very steep and slides occur frequently. Trails formed for maintaining the lines would encourage unsightly ATV trails that also would impact wildlife in the canyon.

I27g Please choose the BLM route for the transmission lines. It is the best way, and if multiple lines could use the same route there would much less disruption to other areas. Clearing land for the lines and maintenance trails could be shared at a lower cost.

Thank You,

Don Eicher Kathleen Eicher

Don & Kathleen Eicher

Response(s)

I27a Comment and route preference noted.

I27b Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I27c Based on data received and digitized from Fairview City, Utah, no Fairview City buffer zone area was identified. The BLM recognizes the corridor does cross lands zoned as sensitive land outside of Fairview City boundaries in Sanpete County as depicted on Fairview City's zoning map. All potential impacts related to the zoning and general plan management direction in Sanpete County are analyzed in Section 3.2.11; potential impacts on future development are analyzed in Section 3.2.11; and potential impacts on property values are analyzed in Section 3.2.22.

I27d The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

The Project would adhere to NESC and Applicant's standard and industries best practices, which include practices to reduce potential fires.

I27e See next page for response to I27e.

I27f See next page for response to I27f.

I27g Comment and route preference noted.

Comment(s)

I27 **Don and Kathleen Eicher – Letter Dated April 25, 2014 (cont.)**

Response(s) - continued

I27e To reduce potential impacts on agricultural irrigation systems, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

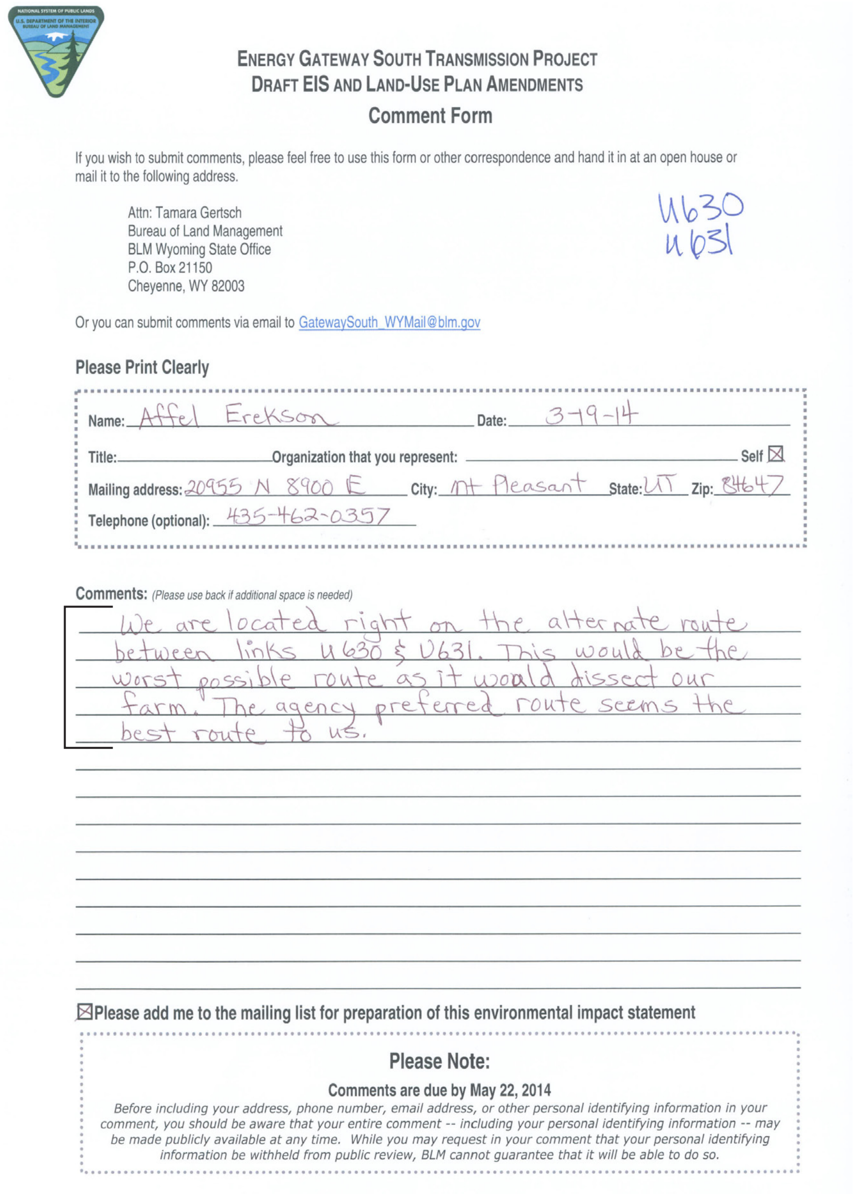
I27f It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (all-terrain vehicles [ATV]), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

Comment(s)

I28 **Affel Erekson**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

U630
U631

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Affel Erekson Date: 3-19-14
Title: Organization that you represent: Self ☒
Mailing address: 20955 N 8900 E City: Mt Pleasant State: UT Zip: 84647
Telephone (optional): 435-462-0357

Comments: *(Please use back if additional space is needed)*

I28a We are located right on the alternate route between links U630 & U631. This would be the worst possible route as it would dissect our farm. The agency preferred route seems the best route to us.

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I28a To reduce potential impacts on agricultural irrigation systems, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

Comment(s)

I29 **Carolyn Everett**

From: **gordan everett** <gceverett44@gmail.com>
Date: Tue, May 13, 2014 at 5:40 PM
Subject: Gateway South Transmission Project
To: GatewaySouth_WYMail@blm.gov

5/13/14

We have 20 acres in lower Argyle Canyon, we have worked hard for many years and put out a lot of money to make this a place where we can have friends and family come and enjoy the beautiful canyon. We have built a cabin, drilled a well, put in solar and generator system.

I29a One of our concerns is the ground killer that they use to get rid of the vegetation under the lines. We have very large pine trees that could possibly be taken out for the lines and that would be a travesty. It is also a concern that the ground killer will get in our streams, ponds, creeks, and springs and contaminate them. Another concern is the health of our children if they are playing in the area of the power lines.

I29b There are all kinds of wildlife in the area, deer, elk, cotton tail rabbits, fox, coyotes, bears, beavers and various kinds of birds including the Sage Grouse. What will the power lines do to them?

During the summer we spend 4-5 days every week at our cabin from May – October. It would be heartbreaking to us to lose what we enjoy so much. We have worked hard and dreamed for years that we would be able to have a place like this, but to think that it could be taken away from us it beyond comprehension.

I29c It seems to me that there is no reason why the lines can't be taken through the south route where there is very little private land that it has to go through. The terrain would be much easier for the power companies and less expensive. So I would really appreciate you taking a good look and consider taking the southern route so we won't lose our beautiful canyon.

Sincerely,

Carolyn Everett – Property 4914-4

Response(s)

I29a *[Response pending from the Applicant.]*

I29b Impacts on wildlife and special status wildlife, including the species mentioned, are discussed in Sections 3.2.7.4.3 and 3.2.8.4.3.

I29c Comment and route preference noted.

Comment(s)

I30 **Gordon Everett**

From: **gordan everett** <gceverett44@gmail.com>
Date: Tue, May 13, 2014 at 5:38 PM
Subject: Energy Gateway South Transmission Project
To: GatewaySouth_WYMail@blm.gov

May 13, 2014

I have thought about this a lot and I don't know what I could say to convince you to not put the power line across our property in lower Argyle Canyon. When we bought this property we thought this would be someplace our family could use for years. With everything getting more crowded where people don't have a place to go that is safe this is one reason we bought this property. We have spent years cleaning it up so we don't have to worry about fires. We have built a cabin and put in bathrooms with a sewer system and have taken the time to do all of this legally. We have also put in a well at great expense; we put in a solar and a generator system so we don't have to depend on outside help.

We were hoping to leave this to our family that it might not be sold or traded but kept as a heritage for the family. We have done research on the property and found that 75% of the roads in this area still belong to the property owners and they are private roads. I feel that these power lines are damaging to the area and the beautiful landscape that we enjoy so much. I30a

I30b You say you can't run the power lies through Whitmore Valley because of the Sage Grouse. We have also done some research on Sage Grouse; they can migrate 8 to 10 miles from season to season. So I don't see how you can draw a line on a map that is 1,000 or 2,000 feet wide and say this side is a Sage Grouse area and this side isn't. Just the savings in cost through the south route instead of through the canyon would be an enormous savings to the power companies and also the Government both Federal and State.

I30c We implore you to take great thought in considering this,and instead of just flying over an area and making a decision that you consider what you are doing to the people that you work for and represent. Consider what you are doing to their lives and their dreams, the heritage they would be passing to the families and friends.

We have put a lot of time & money, sweat & tears into what we have accomplished in our property. Again I ask that you consider what you are doing to the families you are planning to strip their tranquility and safe places of harbor. A lot of us are getting older and there is no possible way to accomplish this in years to come because of our age and financial abilities. We

Response(s)

I30a Impacts on views from residences, recreation sites, travel routes, and special designations as well as impacts on scenery were described as part of the visual resource assessment (refer to Section 3.2.18.5.4).

I30b Section 3.2.8.4 (Study Methodology) identifies the source of information used in the analysis. Potential effects on migration are discussed in this section.

I30c Comment and route preference noted.

Comment(s)

Response(s)

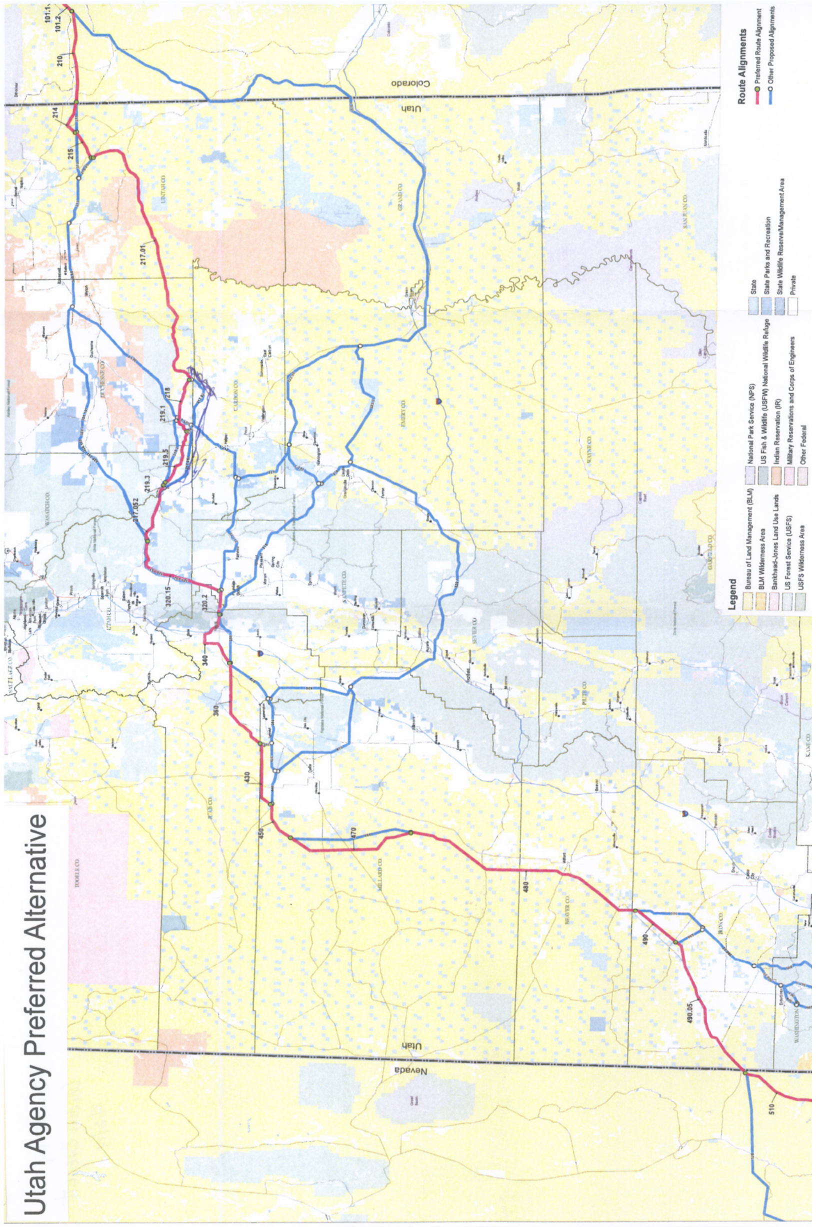
I30 **Gordon Everett (cont.)**

I30c implore you to not just think about this once or twice but what you will be doing to these families, especially the older ones. You need to think about what all this stress is doing to their physical and mental health.

Sincerely,

Gordon Everett (property 4914-4)

Comment(s)	Response(s)
I30 **Gordon Everett (cont.)**	



Utah Agency Preferred Alternative
Colorado
Utah
Nevada
Route Alignments
Preferred Route Alignment
Other Proposed Alignments
Legend
Bureau of Land Management (BLM)
BLM Wilderness Area
Bankhead-Jones Land Use Lands
US Forest Service (USFS)
USFS Wilderness Area
National Park Service (NPS)
US Fish & Wildlife (USFW) National Wildlife Refuge
Indian Reservation (IR)
Military Reservations and Corps of Engineers
Other Federal
State
State Parks and Recreation
State Wildlife Reserve/Management Area
Private
SAN JUAN CO.
GARFIELD CO.
Monticello
101.1
101.2
210
214
215
217.01
219.1
219.3
219.5
220.15
220.2
340
380
430
450
470
480
490
490.05
510

Comment(s)

Response(s)

I31 **Onieta Faatz**

From: **Oneita Faatz** <ofaatz@aol.com>
Date: Sat, May 3, 2014 at 4:27 PM
Subject:
To: GatewaySouth_WYMail@blm.gov

I31a I am a resident of Fairview, Utah. Please, please follow the BLM ALTERNATE ROUTE with your lines. The easement is already there and we don't want the power lines going through our communities in Sanpete county. Thank you for your consideration.

I31a Comment and route preference noted.

Comment(s)

Response(s)

I32 **Brian Faust**

From: **Brian Faust** <bfaust25@gmail.com>
Date: Tue, May 20, 2014 at 11:25 AM
Subject: Gateway South Concerned Property Owner in Argyle Canyon
To: GatewaySouth_WYMail@blm.gov

Wyoming BLM,

I am responding to your request for comments regarding the Gateway South project and specifically the area of the route that brings power transmision lines into pristine, privatley owend mountain land in and around Argyle Canyon, Dushesne County, Utah.

I am asking that you respect the land, wildlife, native american history and petroglighs, and the families that have called this area home for decades and generations. We are small land owners who have enjoyed and protected the land and wildlife for generations together as responsible land owners. Our tiny ten acre parcels would be decimated by the monstrous towers and powere lines that you propose to send through our Cherished, Sceanic and culturaly significant area. This construction would also destroy the habitate of deer, elk, bears, rabits, eagles, hawks, beavers and many many other species that we have worked hard to preserve and which are finally making a comeback .

I32a There are, in fact, several alternative routes that would bypass this charished area including the one preferred by PacificCorp themself. It makes far more sense to run these lines and their huge toweres through government owned land or BLM managed land, which would make use of public lands for a public purpose and far more respectable and responsible to taxpayers. Where it is necessary to access privately owned land, the focus should be on large parcels whre the impact to an individual landowner would be lessened greatly. In addition, it makes NO SENSE to run a project of this magnitude through the difficult terrain of the moutainous Argyle Canyon area when there are viable alternatives through much flatter and more accessible land. Also where the company building it want to go.

For those of us with only 10 acres, the Gateway SOuth project will totally destroy our land and forever adversely impact both the wildlife who live there and the families who have loved and cared for it for generations.

I32b Please protect the small landowners of the Argyle Canyon area. Appove the PacificCorps preferred route and avoid ruination of Argyle Canyon.

Brian A Faust
land Owner, Argyle Canyon
1377 E Chestnut Ln, Gilbert Arizona

I32a Comment and route preference noted.

I32b Comment and route preference noted.

Comment(s)

I33 **Mark Faust**

From: **tracy faust** <faust4az@cox.net>
Date: Wed, May 21, 2014 at 9:24 PM
Subject: Gateway south project
To: GatewaySouth_WYMail@blm.gov

Wyoming BLM

I am responding to your request for comments regarding the Gateway South project and specifically the portion of the route that brings power transmission lines into beautiful, privately owned mountain land in and around Argyle Canyon, Dushesne County, Utah.

I33a I would ask that you respect the land, wildlife and families who inhabit the Argyle Canyon area. My family owns a small 10 acre parcel of land and our beautiful views and encounters with wildlife would be greatly impacted. I would like you to consider the route that would bypass this area and that is actually recommended by PacifiCorp. It makes much more sense to run the towers and lines through BLM managed land which would make use of public land for public use. Please protect the small landowners of the Argyle Canyon area. Approve PacifiCorps preferred route and avoid the destruction of Argyle Canyon.

Mark Faust

Land Owner, Argyle Canyon

Peoria, Arizona

Response(s)

I33a Comment and route preference noted.

Comment(s)

I34 **Merrily Faust**

From: **Merrily Faust** <mksfaust@aol.com>
Date: Mon, May 19, 2014 at 4:57 PM
Subject: Gateway South Project
To: GatewaySouth_wymail@blm.gov

Wyoming BLM

I am responding to your request for comments regarding the Gateway South project and specifically the portion of the route that brings power transmission lines into pristine, privately owned mountain land in and around Argyle Canyon, Dushesne County, Utah.

I would ask that you respect the land, wildlife and families who inhabit the Argyle Canyon area. We are small landowners who have enjoyed and protected the land and wildlife for generations. Our tiny ten acre parcels would be decimated by the monstrous towers and power lines that you propose to send through our area. This construction would also destroy the habitat of deer, elk, bears, sage grouse, rabbits, eagles, hawks and many other species.

I34a There are, in fact, several alternate routes that would bypass this area including the one preferred by PacifiCorp itself. It makes far more sense to run these lines and their huge towers through government owned land, or BLM managed land, which would make use of public land for a public purpose. Where it is necessary to access privately owned land, the focus should be on large parcels where the impact to an individual landowner would be lessened. In addition, it makes no sense to run a project of this magnitude through the difficult terrain of the mountainous Argyle Canyon area when there are viable alternatives through much flatter and more accessible land.

For those of us with only 10 acres, the Gateway South project will totally destroy our land and forever adversely impact both the wildlife who live there and the families who love and care for it.

I34b Please protect the small landowners of the Argyle Canyon area. Approve PacifiCorps preferred route and avoid the ruination Argyle Canyon.

Merrily Faust
Land Owner, Argyle Canyon
7919 Hemphill Drive, San Diego, California

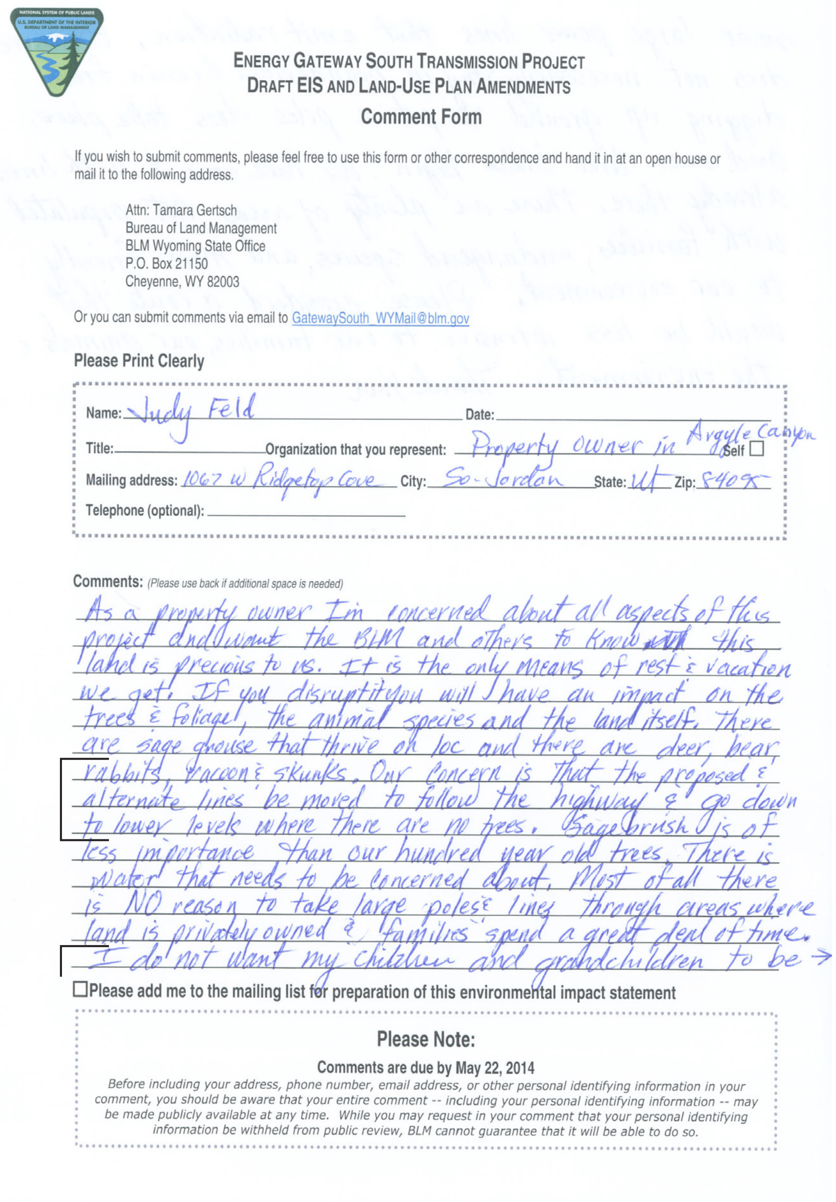
Response(s)

I34a Comment and route preference noted.

I34b Comment and route preference noted.

Comment(s)

I35 **Judy Feld**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Judy Feld Date:
Title: Organization that you represent: Property owner in Argyle Canyon Self ☐
Mailing address: 1067 W Ridgetop Cove City: So-Jordan State: Ut Zip: 84095
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

As a property owner I'm concerned about all aspects of this
project and I want the BLM and others to know this
land is precious to us. It is the only means of rest & vacation
we get. If you disrupt it you will have an impact on the
trees & foliage, the animal species and the land itself. There
are sage grouse that thrive on loc and there are deer, bear,
I35a rabbits, racoon & skunks. Our concern is that the proposed &
alternate lines be moved to follow the highway & go down
to lower levels where there are no trees. Sagebrush is of
less importance than our hundred year old trees. There is
water that needs to be concerned about. Most of all there
is NO reason to take large poles & lines through areas where
land is privately owned & families spend a great deal of time.
I35b I do not want my children and grandchildren to be →

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I35a Comment and route preference noted.

I35b Comment noted. The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

Comment(s)

I35 **Judy Feld (cont.)**

I35b near large power lines that emit radiation. Exposure does not necessarily stay in boundaries.

I35c Erosion from digging up ground to put in poles does take place, and over time slides begin. We have seen it with lines already there, there are plenty of areas not populated with families, endangered species, and more friendly to our environment. Please considerd a route that would be less intrusive to our families, our animals & the environment. Thank You

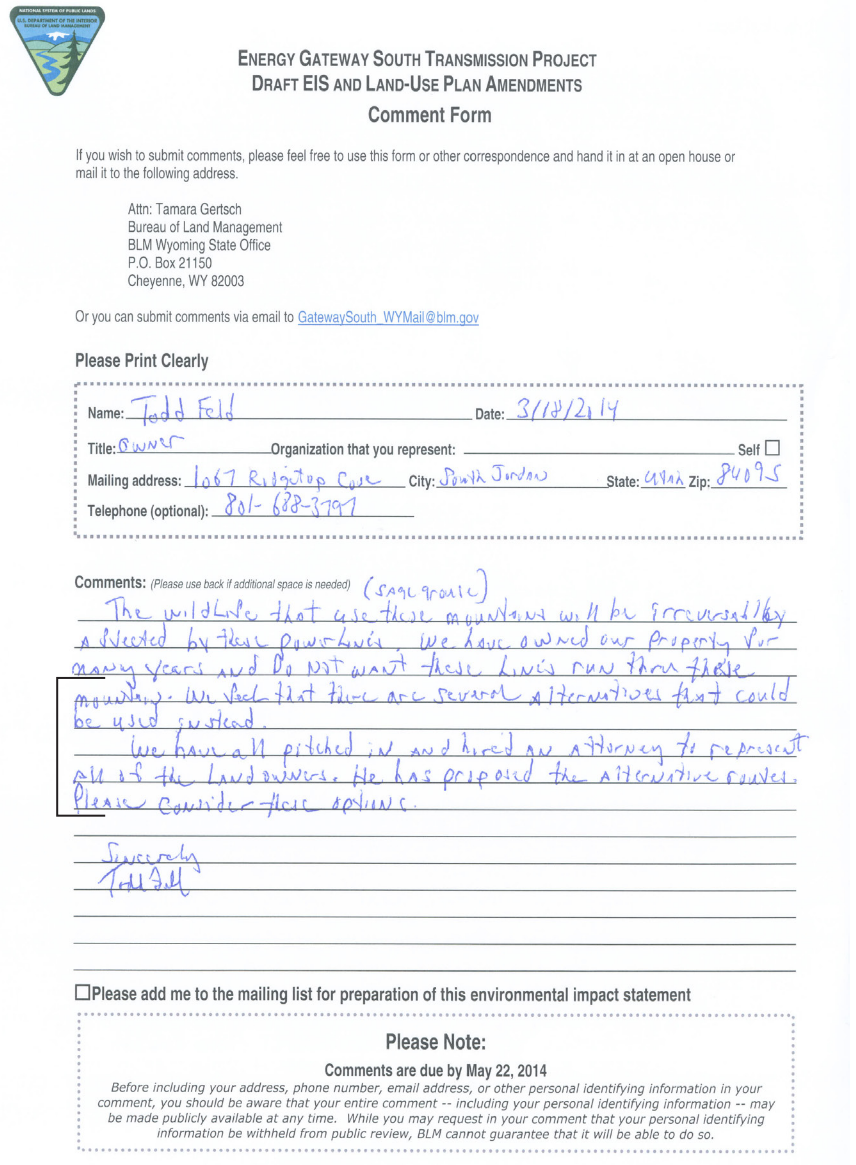
Response(s)

I35c It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5.

Comment(s)

Response(s)

I36 **Todd Feld**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Todd Feld Date: 3/18/2014
Title: Owner Organization that you represent: Self ☐
Mailing address: 1067 Ridgetop Cove City: South Jordan State: Utah Zip: 84095
Telephone (optional): 801-688-3797

Comments: *(Please use back if additional space is needed)* (Sage grouse)

The wildlife that use these mountains will be irreversibly affected by these powerlines. We have owned our property for many years and do not want these lines run thru these mountains. We feel that there are several alternatives that could be used instead.

I36a We have all pitched in and hired an attorney to represent all of the landowners. He has proposed the alternative routes. Please consider these options.

Sincerely
Todd Feld

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I36a Comment and route preference noted.

Comment(s)

I37

Doug Feterl – Feterl Family LLC

From: **Doug Feterl** <dfeterl@rap.midco.net>
Date: Wed, May 21, 2014 at 7:03 AM
Subject: Comment - Draft EIS and Land Use Plan Amendments
To: GatewaySouth_WYMail@blm.gov

I would like to submit the following comment:

I37a Alternate WYCO-C indicates a path in close proximity and parallel to underground pipeline corridors. A landowner concern I have relates to a level of separation from existing pipeline easements with pipelines for petroleum product gathering and transportation. New electric transmission lines along this route may impede the level of development and future revenue to land and mineral rights owners.

Regards,

Doug Feterl

Manager, Feterl Family LLC

8470 Countryside Blvd.

Rapid City, SD 57702

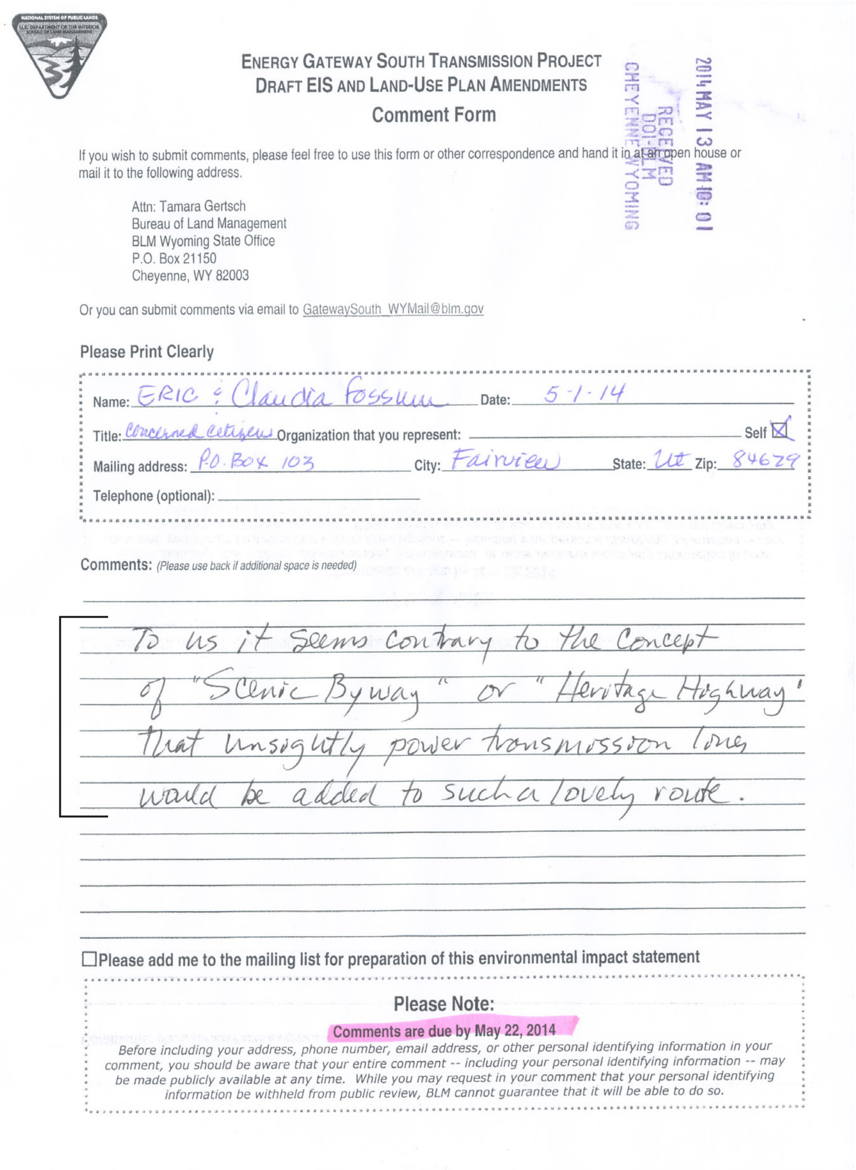
Response(s)

I37a BLM is responsible for issuing a right-of-way grant on federal lands; the BLM has no authority on nonfederal lands and is not responsible for enforcing state takings law. The Applicant will negotiate individual rights-of-way on private land directly with the landowners. PacifiCorp works closely with private landowners to micro-site the transmission line, determine valuation, and secure easements consistent with applicable law.

Comment(s)

Response(s)

I38 **Eric and Claudia Fossum**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE, WYOMING

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: ERIC & Claudia Fossum Date: 5-1-14
Title: Concerned citizen Organization that you represent: Self ☒
Mailing address: P.O. Box 103 City: Fairview State: Ut Zip: 84629
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I38a To us it seems contrary to the concept of "Scenic Byway" or "Heritage Highway" that unsightly power transmission lines would be added to such a lovely route.

☐ Please add me to the mailing list for preparation of this environmental impact statement

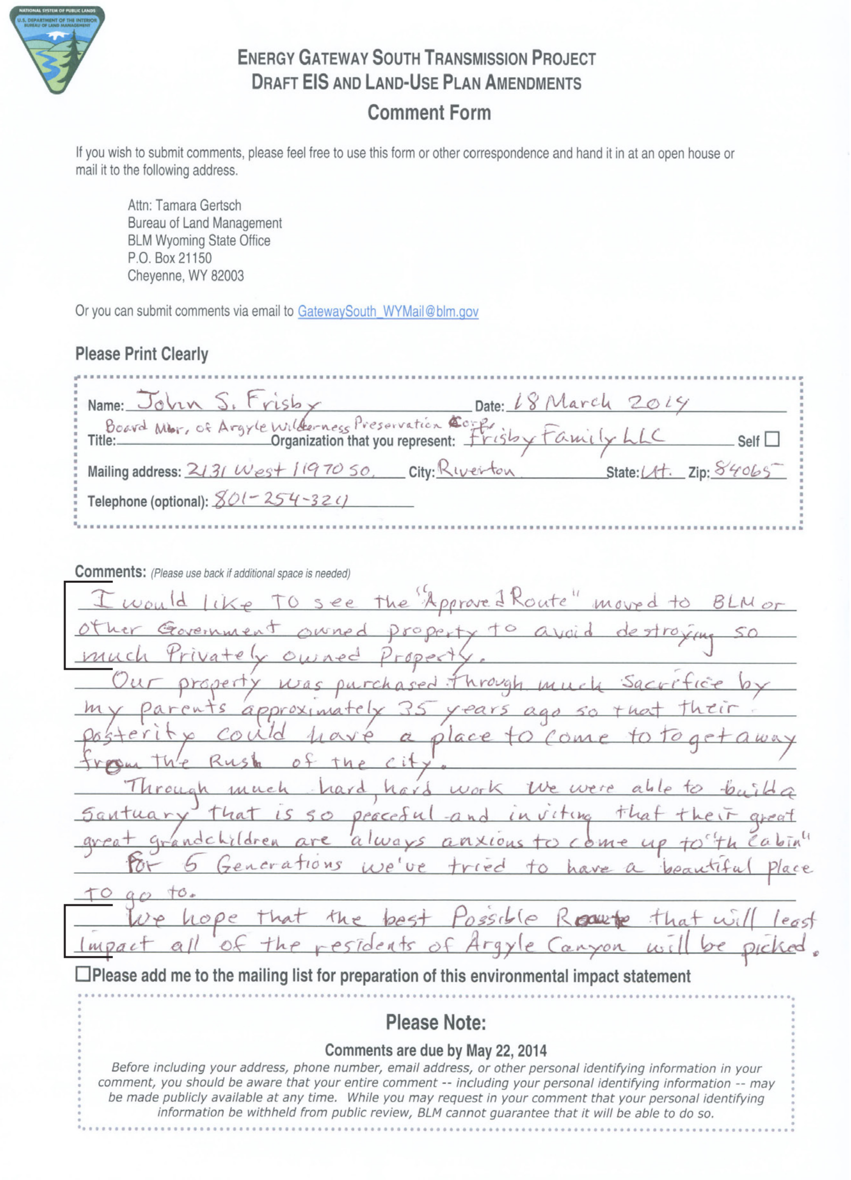
Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I38a Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

Response(s)

I39 **John S. Frisby – Frisby Family LLC**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: John S. Frisby Date: 18 March 2014
Title: Board Mbr, of Argyle Wilderness Preservation Corp. Organization that you represent: Frisby Family LLC Self ☐
Mailing address: 2131 West 11970 So. City: Riverton State: Ut. Zip: 84065
Telephone (optional): 801-254-3211

Comments: *(Please use back if additional space is needed)*

I39a I would like TO see the "Approved Route" moved to BLM or other Government owned property to avoid destroying so much Privately owned Property.

Our property was purchased through much Sacrifice by my parents approximately 35 years ago so that their posterity could have a place to come to to get away from the Rush of the city.

Through much hard, hard work we were able to build a Santuary that is so peaceful and inviting that their great great grandchildren are always anxious to come up to "th Cabin"

For 5 Generations we've tried to have a beautiful place TO go to.

I39b We hope that the best Possible Route that will least Impact all of the residents of Argyle Canyon will be picked.

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

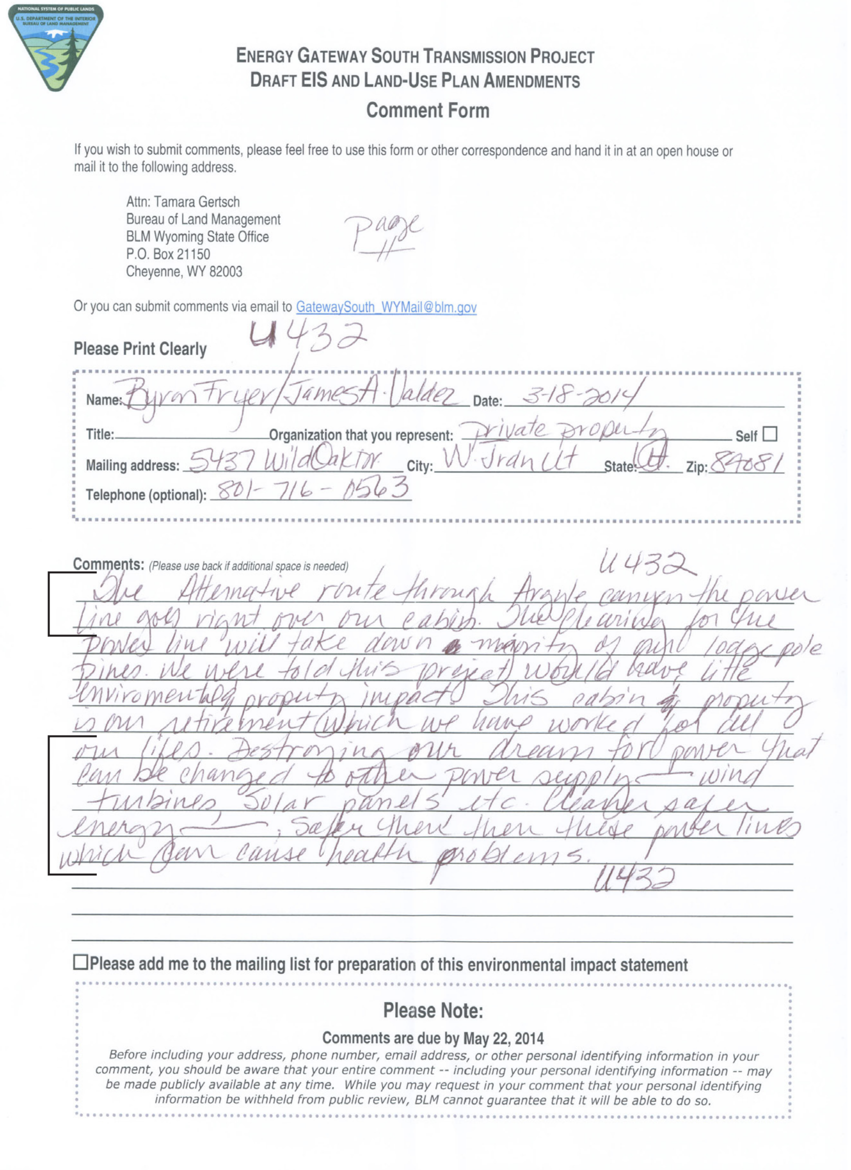
I39a Comment and route preference noted.

I39b Comment and route preference noted.

Comment(s)

Response(s)

I40 **Byron Fryer and James A. Valdez**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Page
#

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly U432

Name: Byron Fryer/James A. Valdez Date: 3-18-2014
Title: Organization that you represent: Private property Self ☐
Mailing address: 5437 Wild Oak Dr. City: W. Jrdn Ut State: Ut. Zip: 84081
Telephone (optional): 801-716-0563

Comments: *(Please use back if additional space is needed)* U432

I40a

The Alternative route through Argyle canyon the power line goes right over our cabin. The clearing for the power line will take down majority of our lodge pole pines. We were told this project would have little Enviromental property impact. This cabin & property is our retirement which we have worked for all our lifes. Destroying our dream for power that can be changed to other power supply — wind turbines, Solar panels etc. Cleaner safer energy —, Safer there then these power lines which can cause health problems.

I40b

U432

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I40a For private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

I40b Comment and route preference noted.

Comment(s)

I41 **Dave Fullmer**

From: **Dave Fullmer** <dffullmer@gmail.com>
Date: Fri, Apr 18, 2014 at 8:23 AM
Subject: Rocky Mountain Gateway South Project, Attn Tamara Gertsch
To: GatewaySouth_WYMail@blm.gov

Hi Tamara

We in the community of Fairview, Utah have been informed that our community and adjacent Fairview Canyon are being considered as the location for the route of a large group of high tension power lines.

I am one of thousands of people in this area who vigorously oppose such a plan for the following reasons:

I41a

The power lines would be a unsightly travesty directly through the intersection of historic highway 89 and a scenic byway.

The communities along highway 89 are a treasure of well preserved mormon pioneer architecture and heritage... one of the few places in the state where such can be experienced in pastoral surroundings.

Fairview Canyon and the locations it leads to are visited by thousands of sportsman and campers who come because of it's unspoiled beauty and ease of access to fishing, hunting and snow sports. It's unique pristine character has earned it the status of one of America's scenic byways. It's hard to imagine a worse insult to it's beauty than high tension power lines draped through it's narrow passages.

I41b

I understand that the BLM has recommended this route be located approx 25 miles to the north, along highway 6. This location makes far more sense because:

There are already similar power lines located there.
The canyon is much wider.
There are little or no camping and sporting locations there.

I urge you to make the prudent decision of not locating these power lines in the Fairveiw area.

--
Best regards
Dave Fullmer
24920 N 9950 E
Fairview, Utah 84629
435-427-9125 Hm
435-262-1264 Cel
1.5 mi west on 100 N by pioneer cemetery

"Flight by machines heavier than air is unpractical and insignificant, if not utterly impossible" Simon Newcomb

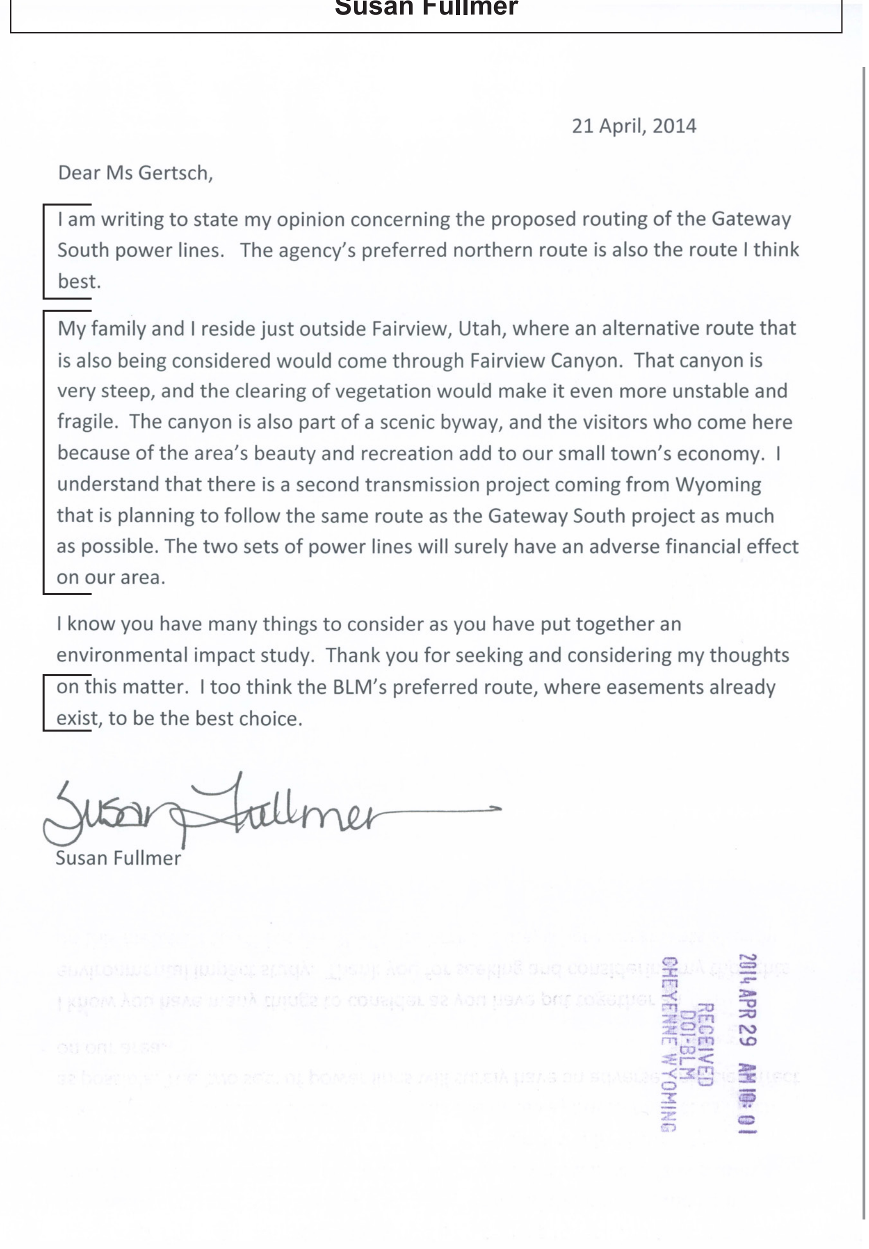
Response(s)

I41a Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I41b Comment and route preference noted.

Comment(s)

I42 **Susan Fullmer**



21 April, 2014

Dear Ms Gertsch,

I42a I am writing to state my opinion concerning the proposed routing of the Gateway South power lines. The agency's preferred northern route is also the route I think best.

I42b My family and I reside just outside Fairview, Utah, where an alternative route that is also being considered would come through Fairview Canyon. That canyon is very steep, and the clearing of vegetation would make it even more unstable and fragile. The canyon is also part of a scenic byway, and the visitors who come here because of the area's beauty and recreation add to our small town's economy. I understand that there is a second transmission project coming from Wyoming that is planning to follow the same route as the Gateway South project as much as possible. The two sets of power lines will surely have an adverse financial effect on our area.

I know you have many things to consider as you have put together an environmental impact study. Thank you for seeking and considering my thoughts I42c on this matter. I too think the BLM's preferred route, where easements already exist, to be the best choice.

Susan Fullmer

Susan Fullmer

2014 APR 29 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Response(s)

I42a Comment and route preference noted.

I42b Comment and route preference noted.

I42c Comment and route preference noted.

Comment(s)

Response(s)

I43 **Richard O. Funk**

21 April 2014

To Whom it may concern:

Subject: Energy Gateway South Transmission Project / Transwest Express Transmission Project

Discussion: I am responding to your request for comments. I think it is great to distribute energy to those in need.

I know you all are concerned with the impacts this project will have on the environment, wildlife, human habitat, economy, health issues, hiking, camping areas and numerous other studies that you have done that I am not aware of.

I43a This project will impact and effect all these areas for generations to come. My request is that the cost of the shortest route not be the determining factor.

I fully support the alternate route through Thistle, west of Birdseye, west of Indianola, over mount Baldy and to Mona.

I trust that wisdom, consideration, technical studies and the good for all humanity will prevail.

Thank You! Sincerely:

Richard O. Funk P.O. Box 455, Fairview, UT 84629

Citizen of Fairview, Sanpete County.

I do not represent any organization and I do not have a title with my name.

I43a Comment and route preference noted.

Comment(s)

I44 **Nolan Gray**

From: <wg_4s@yahoo.com>
Date: Wed, May 14, 2014 at 12:34 PM
Subject: Argyle Powerline
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>

To whom it may concern,
I have just been informed of a planned power line to gouge across the Argyle Mountain range in eastern Utah. Is the price of this power line worth the cost of animals, trees, and habitat that will be displaced, cut down, and disrupted forever?

I44a I am an avid outdoors-man and have spent several years traversing the mountains of Utah. I have seen power lines build before in areas I use to enjoy visiting, however, once these power lines had been constructed the area never recovered. The natural resources of the area being disrupted the animals, which could reliably be found there, have not been seen there since. Not to mention the scar that is left on the face of the mountain in the cutting and maintaining of the "right-of-way". Which brings up another point. Is there really a "right-of-way" through property owned by private individuals, as I understand is the case with most of the Argyle Range? Or is this another sign of the government taking over and doing what ever it pleases and stepping on whom ever happens to be in the way at the time?

I44b There is more to this area than just a pathway to get power from one spot to another. Please consider what is being done to the area and move your power line to an area that has already been marred by human encroachment..

Nolan Gray
wg_4s@yahoo.com
435-590-2124

Response(s)

I44a Comment and route preference noted. The BLM would issue a 250-foot-wide right-of-way grant across the lands it administers that is consistent with applicable regulations, recognizing that the Applicant must acquire all access permissions for lands outside of their jurisdiction.

I44b Comment and route preference noted.

Comment(s)

I45 **Jane Griffiths**

From: **Arlene Griffiths** <janebg52@hotmail.com>
Date: Thu, May 15, 2014 at 3:05 PM
Subject: Power line to Mona
To: "gatewaysouth_WYmail@blm.gov" <gatewaysouth_wymail@blm.gov>

To whom it may concern:

I45a I would like to voice my concern over the proposed power line to go over the Argyle Mountain Range to the power plant in Mona. A power line over these beautiful mountains would ruin it's natural beauty when you cut down trees for the power lines ' path, not to mention the destruction that would be caused by all the roads that you would have to build to get to the area. It isn't really fair to the people who own property in this area. They like to go the mountain to get away for rest and relaxation. When crews are working on a power line this would be impossible, and even after it was built they would have to give up privacy to the crews maintaining the lines.

I45b These mountains are migratory routes for various animals, and a power line would completely upset these animals.

I45c There is a girls camp in that area. A power line would completely take away the fun of getting away from civilization .

Please reconsider the planned route and put it somewhere else.

Respectfully,
Jane Griffiths

Response(s)

I45a Due to the largely intact landscape character, steep slopes, and dense vegetation in this area along with foreground views from residences, high impacts were assigned for much of the Argyle Canyon and Argyle Ridge area. All feasible selective mitigation measures were applied to reduce impacts to the extent practicable.

I45b Comment noted. Potential direct and indirect effects on wildlife are disclosed in Section 3.2.7.4.3 Impact Assessment and Mitigation Planning. Specific impacts on wildlife migration routes for each alternative route and route variation are discussed in Section 3.2.7.5.4. Route Variations are discussed in Appendix F. The application of relevant design features and selective mitigation measures listed in Table 3-80 will reduce disturbance and other impacts on wildlife species.

I45c To establish the resource database for analysis for the EIS, the EIS team gathered, compiled, and analyzed existing data provided by federal, state, and local agencies and other credible public sources of information. If data indicated the presence of a camp, the facility was avoided to the extent practicable and/or located in such a way that activities at the facility would not be affected (visually or physically). However, in some cases, data received did not indicate the presence of recreational uses, particularly on private land where specific uses may not be evident in the public data. Such is the case with Camp Timberlane and other camps administered by the Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-day Saints (CPB).

Regarding Camp Timberlane, when data were compiled, data received for the area indicated privately owned parcels and did not indicate existence of an organized recreational youth camp. Comments on the Draft EIS from the CPB informed the EIS team of the recreational use of the area. In response to this new information, representatives of the CPB, Applicant, and BLM met in April 2014 to discuss the CPB properties. Subsequently, the Applicant identified route variations in this area that would avoid Camp Timberlane while considering other existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

Comment(s)

I46 **Russell Griffiths**

From: **russell griffiths** <argriffbr@hotmail.com>
Date: Wed, May 14, 2014 at 1:40 PM
Subject: Power line to Mona
To: "GatewaySouth_WYMail@blm.gov" <gatewaysouth_wymail@blm.gov>

I46a We would like to protest putting a power line over the Argyle Range of mountains. These mountains are too beautiful to cut swaths of trees down.

I46b They are so rugged that you would have to build roads out on every ridge and up every canyon to get to the power line sight, and that would completely ruin the looks of the mountain. People have spent thousands and thousands of dollars to buy this property, to have a place to enjoy in its natural environment. A power line would make this property ugly and take away the natural beauty.

I46c There are elk, deer, bear and numerous smaller animals that make this range of mountains home. The power line would destroy the migratory routes and homes for these animals.

It would be to your advantage to find an easier route for the power line. Even if another route

I46d would be longer it would be faster to build. If you dig down three inches on that mountain range you run into hard bed rock that you would have to blast out holes for the power poles.

Please reconsider building this power line on a different route and leave the Argyle mountain range in its natural beauty.

Thank You,
Russell and Arlene Griffiths   Nephi, Utah

Response(s)

I46a Comment and route preference noted.

I46b Due to the largely intact landscape character, steep slopes, and dense vegetation in this area along with foreground views from residences, high impacts were assigned for much of the Argyle Canyon and Argyle Ridge area. All feasible selective mitigation measures were applied to reduce impacts to the extent practicable.

I46c See response to Comment I45b.

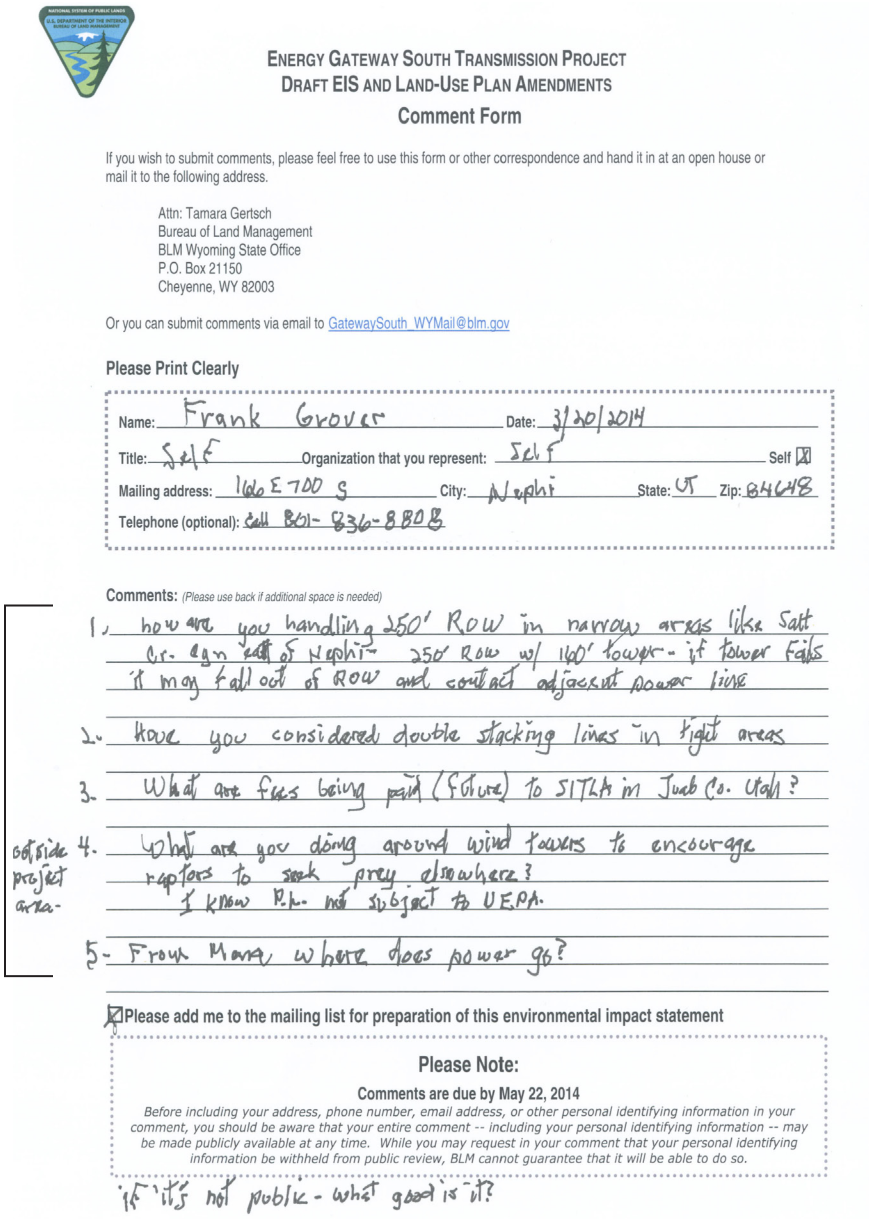
I46d Comment noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5.

Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATVs), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

Comment(s)

I47 **Frank Grover**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Frank Grover Date: 3/20/2014
Title: Self Organization that you represent: Self Self ☒
Mailing address: 166 E 700 S City: Nephi State: UT Zip: 84648
Telephone (optional): cell 801-836-8808

Comments: *(Please use back if additional space is needed)*

I47a

1. how are you handling 250' ROW in narrow areas like Salt Cr. cyn east of Nephi - 250' ROW w/ 160' tower - if tower Fails it may fall out of ROW and contact adjacent power line
2. Have you considered double stacking lines in tight areas
3. What are fees being paid (future) to SITLA in Juab Co. Utah?

outside project area-

4. What are you doing around wind towers to encourage raptors to seek prey elsewhere?
   I know P.L. not subject to UEPA.
5. From Mona where does power go?

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

if it's not public - what good is it?

Response(s)

I47a

The BLM understands that if a portion of the route is located on property owned or controlled by SITLA, the Applicant would independently negotiate with SITLA to microsite the line and acquire land-use rights so the interests and needs of both the Applicant and SITLA are reasonably addressed.

Comment(s)

I48 **DeMar Guymon**

From: **DeMar Guymon** <guymonsmachining@yahoo.com>
Date: Tue, May 13, 2014 at 9:57 PM
Subject: Objection to Agency Preferred Route
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>

I48a I would like to object to the agency preferred route for the power line as it goes across
the mountain ranges, most particularly the Argyle Mountain Range. I do not believe that
taking out miles of trees and impacting the various wildlife is the best route. I own
property for over 3 miles along the Argyle Ridge and there are many old trees along that
area and the whole mountain range that will be decimated if the power line is allowed
across there. There are elk & deer migration routes that cross the ridge line that would
I48b be impacted by the removal of the trees and construction there. We have bear dens just
below the proposed route that would be disrupted by the constant travel that would be
necessary to check the lines.

There are also mountain lions, pine hens, bobcats, chuckars, many other birds I haven't identified that live there. Also acres of wildflowers, wild roses, and other undergrowth that construction would destroy.

I48c Most of the Argyle range is private property and having a line run across there would open that whole area to trespassers, it would be like making a super highway for them to drive along and fences are hard to keep intact when people have a clear trail to drive over them.

Looking at the maps I believe that there are other less destructive routes that the power
line can be taken across. I can't believe the BLM would opt to destroy miles of pristine
mountain ground and ruin habitat for the animals just so a power line can take a short
route to its destination. We have few areas left that are undisturbed and when I bought
my property it was with the intention to keep it in its natural state and enjoy the
mountain as is. A power line across the middle of my property would destroy what I
I48d have sought to preserve. I also have the property as a business and sell hunting rights
for bear and elk so the power line would also impact the primitive nature of the area and
lessen my ability to attract hunters.

Please choose another route, the forests are disappearing so keep the ones we still have as pristine as they are now. Thank you, DeMar Guymon, GMF Enterprises LLC

Response(s)

I48a Comment and route preference noted.

I48b In Section 3.2.7.4.1, potential impacts on bears and other mammals are discussed under the heading Mammals.

I48c Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATVs), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

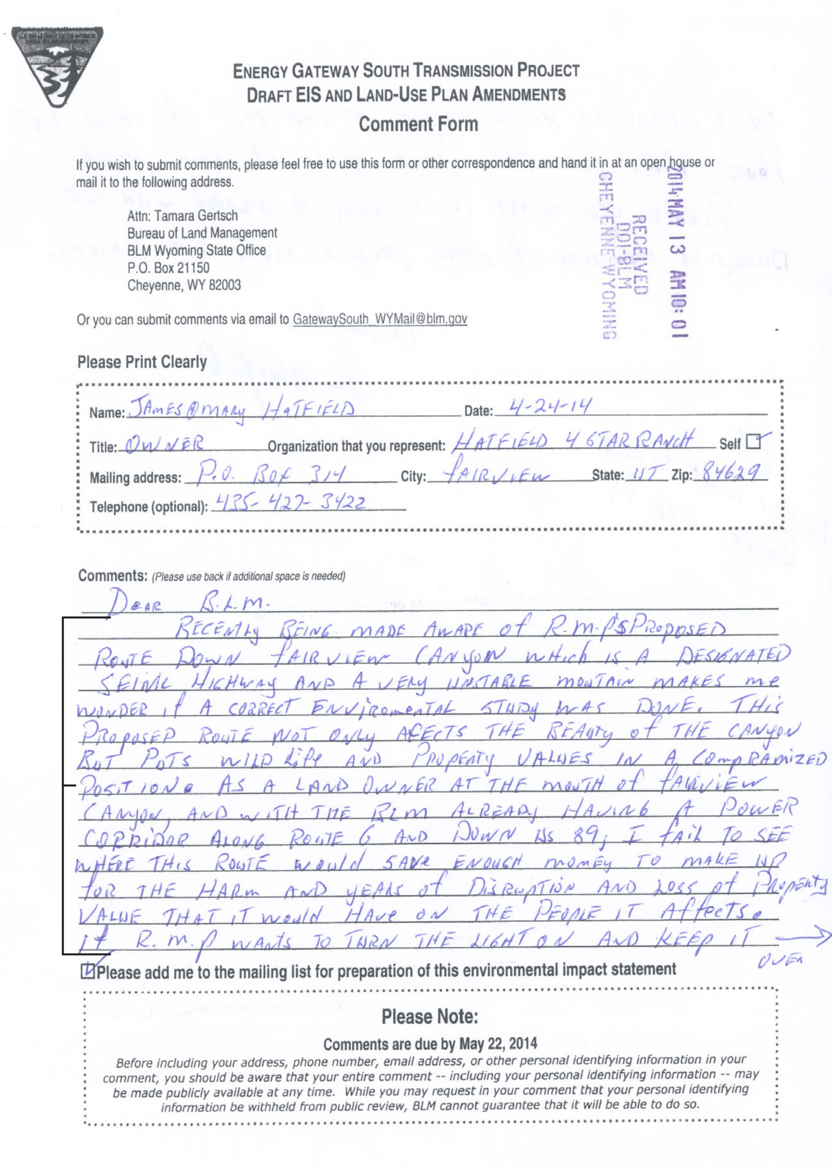
Based on comments received on the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These alternative route variations have been analyzed for the Final EIS and are addressed in Appendix F.

I48d Social and economic condition impacts are discussed in Section 3.2.22. Project-related disturbance to properties are anticipated to occur mainly during construction and maintenance of the Project occurring occasionally during the year. After the initial construction and reclamation of the Project right-of-way, impacts on hunting, including commercial hunting operations, are anticipated to be minimal. Impacts on hunting are discussed in Section 3.2.12. The following text has been added to this section:

Commercial hunting operations occur throughout the Project area. Short-term effects from construction activities on these operations would include temporary disturbance, restriction or closure of access to hunting, and noise and construction activities disrupting wildlife. Long-term effects generally would be expected to be minimal with occasional noise and dust occurring during maintenance activities on the transmission line. Selective Mitigation Measure 12 would also be applied to these areas and compensation for land and private property concerns would be negotiated by the Applicant with the land and/or business owner.

Comment(s)

I49 **James and Mary Hatfield**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE-WYOMING
2014 MAY 13 AM 10: 01

Please Print Clearly

Name: James & Mary Hatfield
Date: 4-24-14
Title: Owner
Organization that you represent: Hatfield 4 Star Ranch
Self ☐
Mailing address: P.O. Box 314
City: Fairview
State: UT
Zip: 84629
Telephone (optional): 435-427-3422

Comments: (Please use back if additional space is needed)

Dear B.L.M.

I49a

Recently Being made Aware of R.M.P's Proposed Route Down Fairview Canyon which is a Designated Seinic Highway and a very unstable moutain makes me wonder if a correct Enviromental study was Done. This Proposed Route not only Afects the Beauty of the canyon But Puts wild life and Property Values in a compramized position.

I49b

As a land owner at the mouth of Fairview Canyon, and with the BLM already having a Power Corridor along Route 6 and Down US 89; I fail to see where this Route would save enough money to make up for the Harm and years of Disruption and loss of Property Value that it would Have on the People it Affects. If R.M.P wants to turn the light on and keep it →

over

☑ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I49a

Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

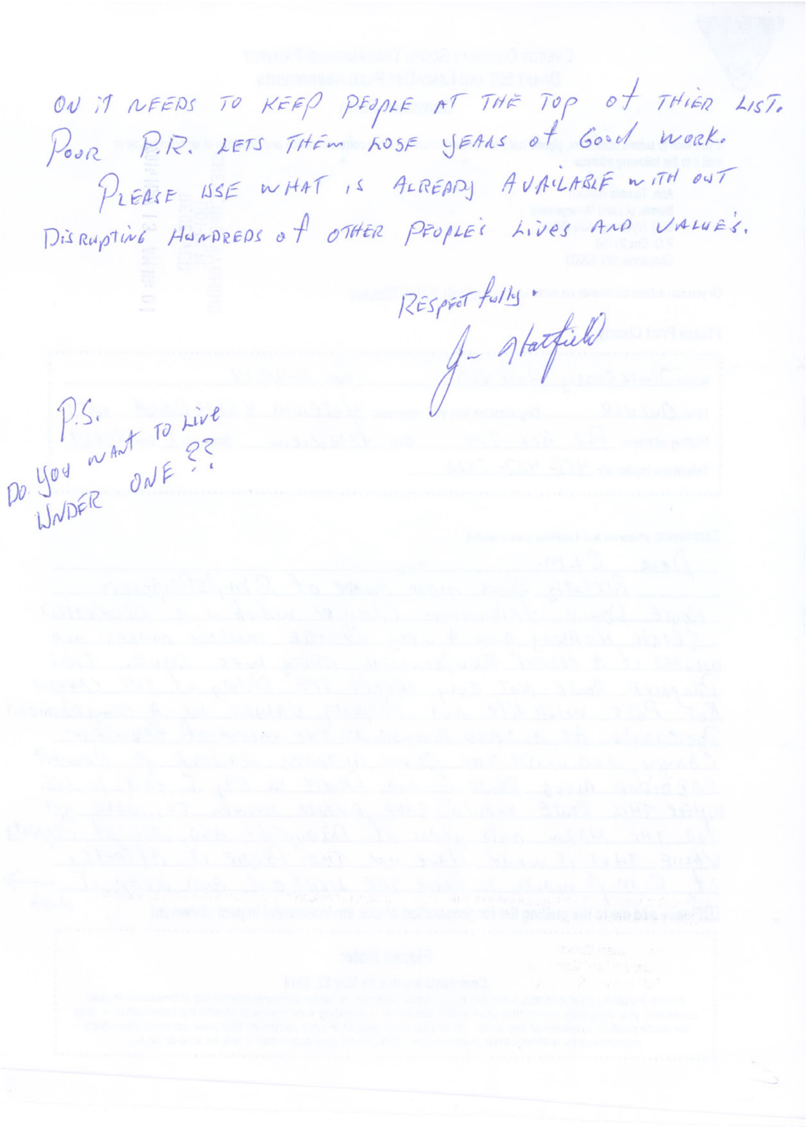
I49b

Comment and route preference noted. As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. There are 10 residences north of Fairview, Utah, located within 0.25 mile of Alternatives COUT BAX-E and COUT-H, which are likely to be affected by the proximity of the transmission line.

Comment(s)

Response(s)

I49 | **James and Mary Hatfield (cont.)**



ON IT NEEDS TO KEEP PEOPLE AT THE TOP OF THIER LIST. POOR P.R. LETS THEM LOSE YEARS OF GOOD WORK.

PLEASE USE WHAT IS ALREADY AVAILABLE WITH OUT DISRUPTING HUNDREDS OF OTHER PEOPLE'S LIVES AND VALUE'S.

RESPECTFULLY,

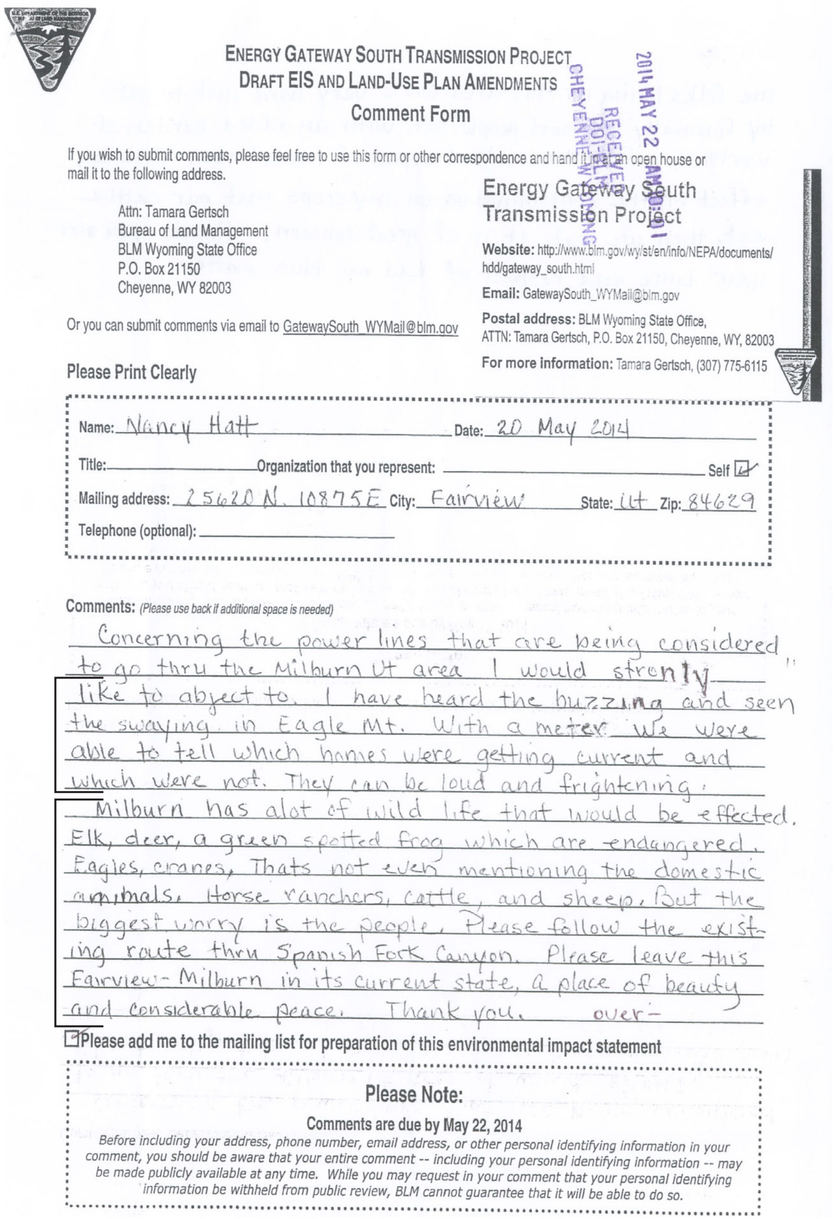
J. Hatfield

P.S.
DO YOU WANT TO LIVE UNDER ONE??

Comment(s)

Response(s)

I50 **Nancy Hatt**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

2014 MAY 22 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE, WYOMING

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Energy Gateway South
Transmission Project

Website: http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html
Email: GatewaySouth_WYMail@blm.gov
Postal address: BLM Wyoming State Office, ATTN: Tamara Gertsch, P.O. Box 21150, Cheyenne, WY, 82003
For more information: Tamara Gertsch, (307) 775-6115

Please Print Clearly

Name: Nancy Hatt Date: 20 May 2014
Title: Organization that you represent: Self ☑
Mailing address: 25620 N. 10875E City: Fairview State: Ut Zip: 84629
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

Concerning the power lines that are being considered to go thru the Milburn Ut area I would stronly "

I50a like to abject to. I have heard the buzzing and seen the swaying in Eagle Mt. With a meter we were able to tell which homes were getting current and which were not. They can be loud and frightening.

I50b Milburn has alot of wild life that would be effected. Elk, deer, a green spotted frog which are endangered. Eagles, cranes, Thats not even mentioning the domestic animals. Horse ranchers, cattle, and sheep. But the biggest worry is the people. Please follow the existing route thru Spanish Fork Canyon. Please leave this Fairview-Milburn in its current state, a place of beauty and considerable peace. Thank you. over–

☑ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

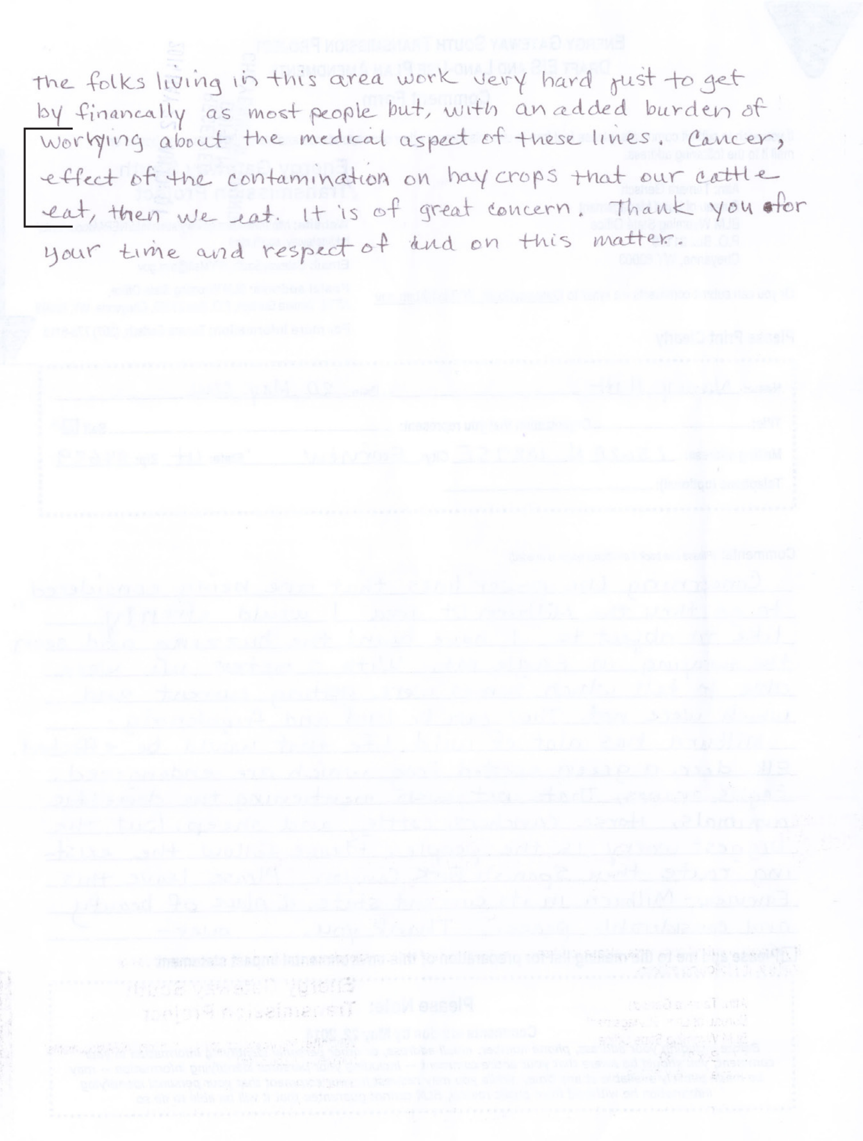
I50a Comment noted.

I50b Comment and route preference noted.

Comment(s)

Response(s)

I50 | **Nancy Hatt (cont.)**



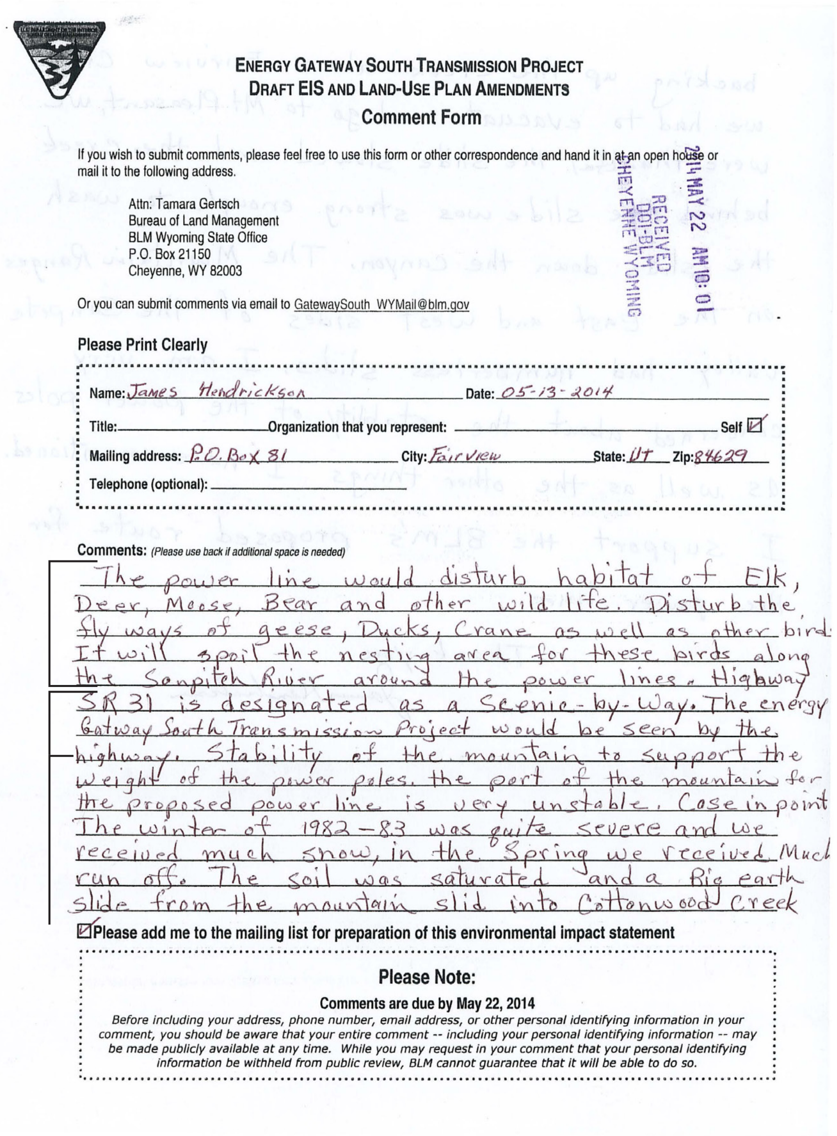
the folks living in this area work very hard just to get by financally as most people but, with an added burden of

I50c worrying about the medical aspect of these lines. Cancer, effect of the contamination on hay crops that our cattle eat, then we eat. It is of great concern. Thank you for your time and respect of kind on this matter.

I50c Comment noted. The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action for environmental protection (specifically, Design Feature 11; refer to Table 2-8), the Applicant will continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. The potential effects of EMF are discussed in greater detail in Section 3.2.23. Potential impacts to visual resources and scenery are discussed in Section 3.2.18. Socioeconomic conditions are discussed in Section 3.2.22.

Comment(s)

I51 | **James Hendrickson**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 MAY 22 AM 10:01

Please Print Clearly

Name: James Hendrickson Date: 05-13-2014
Title: Organization that you represent: Self ☑
Mailing address: P.O. Box 81 City: Fairview State: UT Zip: 84629
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I51a The power line would disturb habitat of Elk, Deer, Moose, Bear and other wild life. Disturb the fly ways of geese, Ducks, Crane as well as other birds. It will spoil the nesting area for these birds along the Sanpitch River around the power lines.

I51b Highway SR 31 is designated as a Scenic-by-Way. The energy Gatway South Transmission Project would be seen by the highway.

I51c Stability of the mountain to support the weight of the power poles. the part of the mountain for the proposed power line is very unstable. Case in point The winter of 1982-83 was quite severe and we received much snow, in the Spring we received Much run off. The soil was saturated and a Big earth slide from the mountain slid into Cottonwood Creek

☑ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I51a Comment and route preference noted.

I51b Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I51c Comment and route preference noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5.

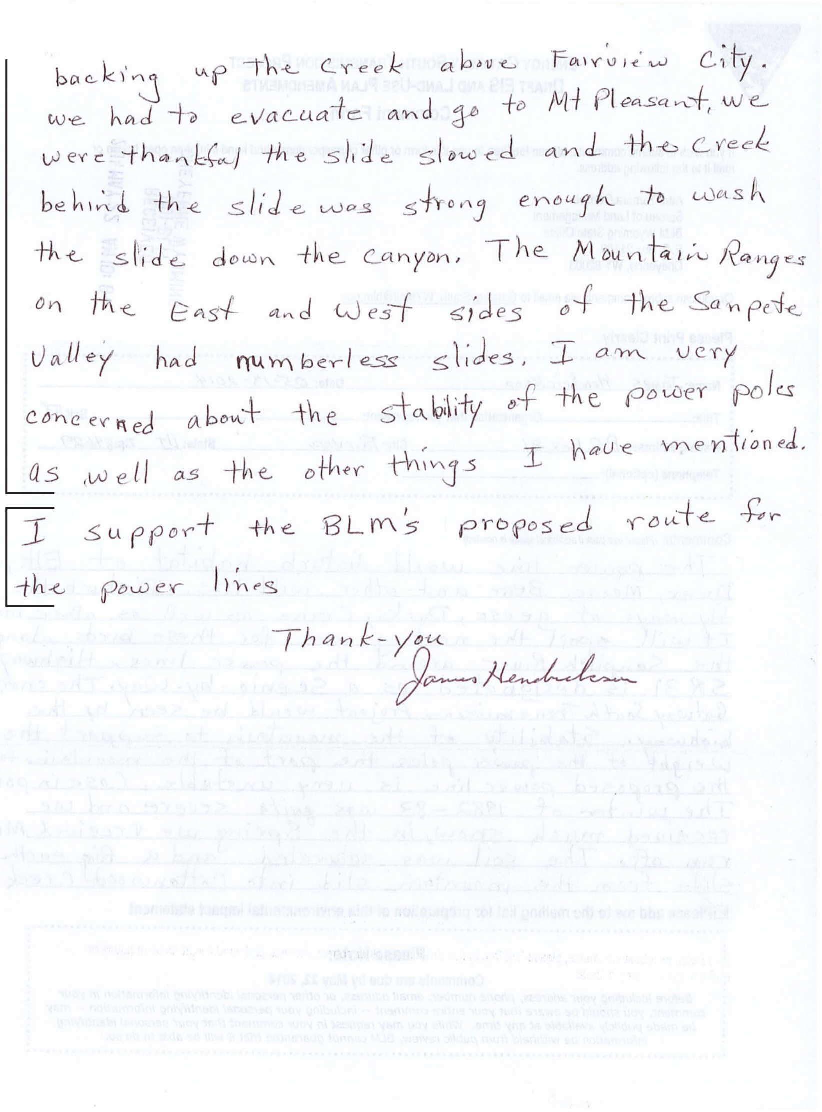
Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATVs), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

Comment(s)

Response(s)

I51 **James Hendrickson (cont.)**



I51c

backing up the creek above Fairview City. we had to evacuate and go to Mt Pleasant, we were thankful the slide slowed and the creek behind the slide was strong enough to wash the slide down the canyon. The Mountain Ranges on the East and West sides of the Sanpete Valley had numberless slides. I am very concerned about the stability of the power poles as well as the other things I have mentioned.

I51d

I support the BLM's proposed route for the power lines

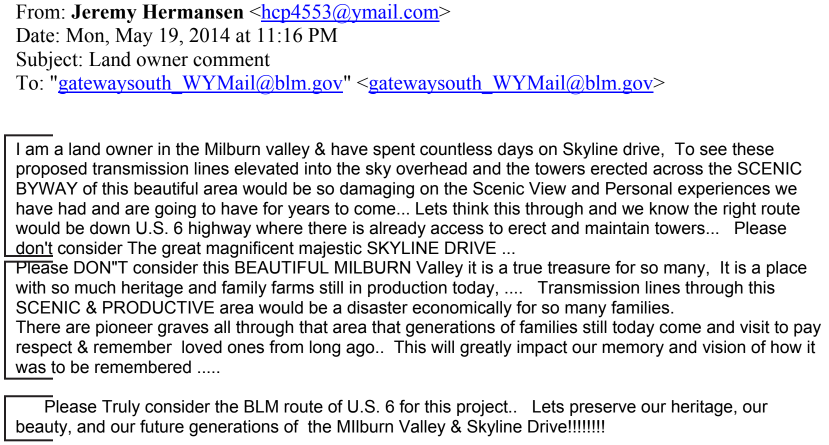
Thank-you

James Hendrickson

I51d Comment and route preference noted.

Comment(s)

I52 | **Jeremy Hermansen**



From: **Jeremy Hermansen** <hcp4553@ymail.com>
Date: Mon, May 19, 2014 at 11:16 PM
Subject: Land owner comment
To: "gatewaysouth_WYMail@blm.gov" <gatewaysouth_WYMail@blm.gov>

I52a I am a land owner in the Milburn valley & have spent countless days on Skyline drive, To see these proposed transmission lines elevated into the sky overhead and the towers erected across the SCENIC BYWAY of this beautiful area would be so damaging on the Scenic View and Personal experiences we have had and are going to have for years to come... Lets think this through and we know the right route would be down U.S. 6 highway where there is already access to erect and maintain towers... Please don't consider The great magnificent majestic SKYLINE DRIVE ...

I52b Please DON"T consider this BEAUTIFUL MILBURN Valley it is a true treasure for so many, It is a place with so much heritage and family farms still in production today, ... Transmission lines through this SCENIC & PRODUCTIVE area would be a disaster economically for so many families.
There are pioneer graves all through that area that generations of families still today come and visit to pay respect & remember loved ones from long ago.. This will greatly impact our memory and vision of how it was to be remembered .....

I52c Please Truly consider the BLM route of U.S. 6 for this project.. Lets preserve our heritage, our beauty, and our future generations of the MIlburn Valley & Skyline Drive!!!!!!!!

Response(s)

I52a Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I52b Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I52c Comment and route preference noted.

Comment(s)

I53 **Kolten Hermansen**

From: **Kolten Hermansen** <kolten.hermansen@yahoo.com>
Date: Thu, May 22, 2014 at 10:49 PM
Subject: Gateway South Project
To: "gatewaysouth_WYMail@blm.gov" <gatewaysouth_WYMail@blm.gov>

I53a I support the BLM route of U.S. 6 highway route for this project.

I53b I absolutely love the SCENIC BYWAY of SKYLINE DRIVE; To destroy this awesome landscape of memories & heritage, and adventure would be very SELFISH on Rocky Mtn Power to even consider this route of travel! This Project is also a road building project to access each tower, This is not what the public wants to see going across these beautiful mountains & farm ground in the valley .. Please,, lets keep this project along the side of U.S. 6 where there is already road access And keep our BYWAYS SCENIC>> Our Mountains are our away therapy, the air is quiet, the wildlife are beautiful, its a refuge for all animals and man's spirit!!

Response(s)

I53a Comment and route preference noted.

I53b Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

I54 **Tori Hermansen**

From: **Tori Hermansen** <torihermansen@yahoo.com>
Date: Tue, May 20, 2014 at 11:00 AM
Subject: Gateway South Project
To: "gatewaysouth_WYMail@blm.gov" <gatewaysouth_WYMail@blm.gov>

Dear National Project Manager,

As a property owner in Sanpete County, I wanted to express my opinion and concern for the Gateway South Project. I do realize there is a need for power lines all across our state and country and I am so glad that there are different routes in consideration before this project goes in.

I54a In my opinion, it would be a travesty to bring the power lines through the route proposed by Rocky Mountain Power. I know Highway 31 is a designated National Scenic Byway and is a major recreation area used by so many people. It is an absolutely beautiful area where so many people love to go. My family makes many trips every year to Skyline Drive to fish, camp, ride horses, and to enjoy the scenic beauty and quiet tranquility. We love to see the wildlife and the wild flowers, and the aspen trees. Having power lines/towers and maintenance roads all over up there would take away so much of the beauty and it would completely change the whole environment surrounding Highway 31 and Skyline Drive. It is not something that will only have a minimal effect, it will be permanent.

I54b I also feel that the route proposed by Rocky Mountain Power doesn't take into consideration the pioneer heritage that is scattered all across the Fairview and Milburn area. There are multiple original pioneer settlements and paraphernalia that deserve to be protected and preserved. We have property in the Oak Creek area and not only do we have 2 pioneer cabins on our property, we also have some ashes from ancestors who worked to settle the land, spread throughout our fields. We feel that this is sacred and deserves protecting.

I54c The proposed route by the BLM would be a better route to go. Bringing the transmissions lines down along Highway 6 and across Thistle would help protect a national scenic byway, a Wildlife Management area, pioneer heritage and one of the most beautiful recreation areas in the state of Utah. From what I understand, there are already easements in place and it doesn't seem like it would leave as big of a scar, with easier access to roads for the towers to be built and maintained.

Thank you for accepting public opinion and your consideration on this matter.

Tori Hermansen

Response(s)

I54a Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I54b Based on existing literature, file searches, and cultural resources inventories, there may be potential cultural resources impacts along the alternative routes crossing Sanpete Valley and adjacent areas. If one of these alternative routes is selected (i.e., Alternatives COUT-H or COUT BAX-E), a Class III intensive pedestrian inventory (survey) of the selected alternative route and associated roads, substations, and ancillary facilities would be conducted. All cultural resources sites identified would be documented and evaluated for eligibility for the NRHP and appropriate selective mitigation measures identified in consultation with involved state and federal land-management agencies and private landowners.

I54c Comment and route preference noted.

Comment(s)

Response(s)

I55 **Butch Heth**

From: **Butch** <butch3@cut.net>
Date: Tue, Apr 22, 2014 at 6:37 PM
Subject: Proposed Power path through Sanpete County, UT
To: GatewaySouth_WYMail@blm.gov, TransWest_WYMail@blm.gov
Cc: Jerrold Ras <3rranch1969@gmail.com>

Hello,

I55a As a property owner in the vicinity of the proposed pathway for the line, I would like to voice my opposition to the preferred path, and cordially request that the route that was originally suggested (Via US 6 through Utah County) be considered, since this route has already been designated as a power line corridor.

I bought my property and moved here to escape the power lines and related ugliness from towers that disrupt the spacious views, to the health concerns of living close to that much inductance. I am not a tree hugger, nor am I an environmental whacko, but I love my land and my unobstructed views of the mountains, and don't really look forward to the encroachment of 'civilization' that this brings.

I am hoping that my neighbors and friends will have all expressed similar concerns, and have been civil and polite in the process.

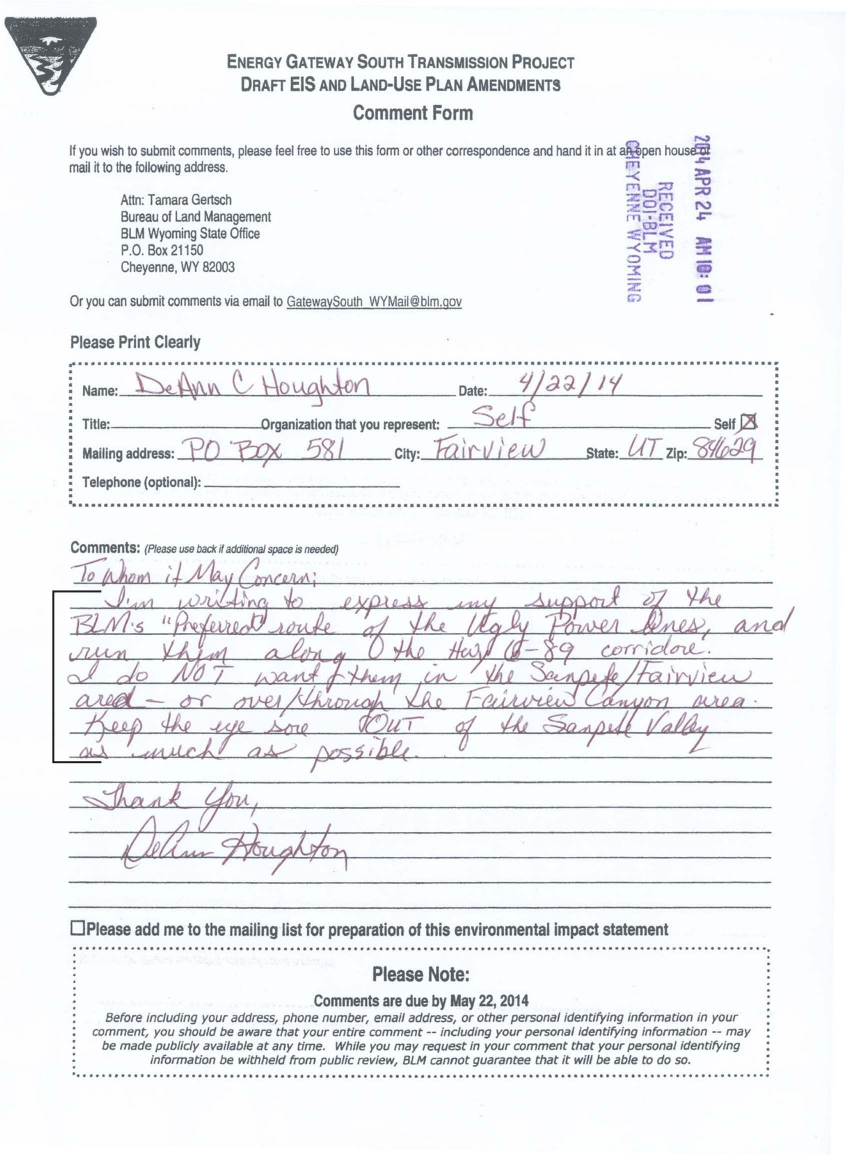
Thanks for your consideration in this matter.

Butch Heth
Fairview, UT

I55a Comment and route preference noted.

Comment(s)

I56 **DeAnn C. Houghton**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 APR 24 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: DeAnn C Houghton Date: 4/22/14
Title: Organization that you represent: Self Self ☒
Mailing address: PO Box 581 City: Fairview State: UT Zip: 84629
Telephone (optional):

Comments: (Please use back if additional space is needed)

To Whom it May Concern;

I56a I'm writing to express my support of the BLM's "Preferred" route of the Ugly Power lines, and run them along the Hwy U-89 corridore. I do NOT want them in the Sanpete/Fairview area – or over/through the Fairview Canyon area. Keep the eye sore OUT of the Sanpete Valley as much as possible.

Thank You,
DeAnn Houghton

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

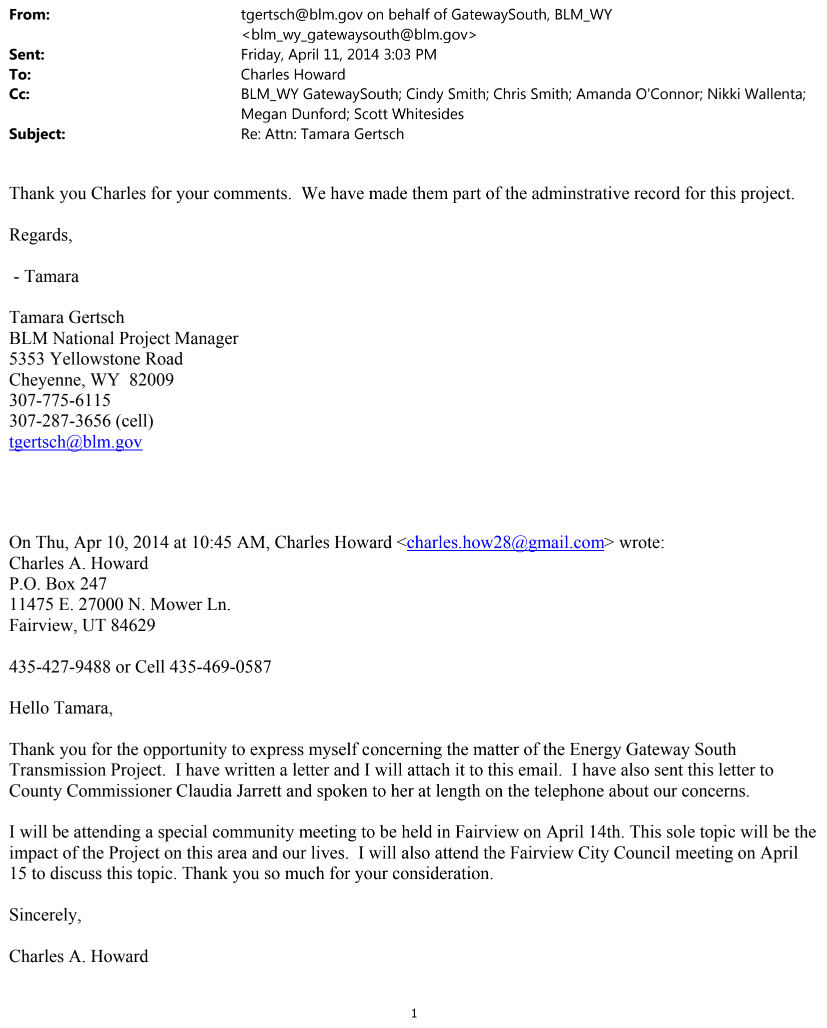
Response(s)

I56a Comment and route preference noted.

Comment(s)

Response(s)

I57 Charles Howard



From: tgertsch@blm.gov on behalf of GatewaySouth, BLM_WY <blm_wy_gatewaysouth@blm.gov>
Sent: Friday, April 11, 2014 3:03 PM
To: Charles Howard
Cc: BLM_WY GatewaySouth; Cindy Smith; Chris Smith; Amanda O'Connor; Nikki Wallenta; Megan Dunford; Scott Whitesides
Subject: Re: Attn: Tamara Gertsch

Thank you Charles for your comments. We have made them part of the adminstrative record for this project.

Regards,

- Tamara

Tamara Gertsch
BLM National Project Manager
5353 Yellowstone Road
Cheyenne, WY 82009
307-775-6115
307-287-3656 (cell)
tgertsch@blm.gov

On Thu, Apr 10, 2014 at 10:45 AM, Charles Howard <charles.how28@gmail.com> wrote:
Charles A. Howard
P.O. Box 247
11475 E. 27000 N. Mower Ln.
Fairview, UT 84629

435-427-9488 or Cell 435-469-0587

Hello Tamara,

Thank you for the opportunity to express myself concerning the matter of the Energy Gateway South Transmission Project. I have written a letter and I will attach it to this email. I have also sent this letter to County Commissioner Claudia Jarrett and spoken to her at length on the telephone about our concerns.

I will be attending a special community meeting to be held in Fairview on April 14th. This sole topic will be the impact of the Project on this area and our lives. I will also attend the Fairview City Council meeting on April 15 to discuss this topic. Thank you so much for your consideration.

Sincerely,

Charles A. Howard

1

Comment(s)

I57 **Charles Howard (cont.)**

April 3, 2014

To Whom It May Concern:

I am a 45 year resident of the Oakcreek area North of Fairview. Most of the residents of this area are native or near native of this area. Our homes and lives are in the corridor that is described by the Energy gateway South Transmission Project. I have numerous concerns about this choice for the placement of this enormous power transmission line. I hope that you will consider the great damage this will cause to our way of life and the many others who live in this pristine farming community. There is not a great deal of industry in our area and we have chosen this way of life by design and for our good health. We have taken great pains and expense to avoid the types of pollution that exist in cities and industrial areas.

There is significant pollution of at least two types that will come to us as a result of
I57a this Project. One is visual pollution: These large towering polls would become the
most prominent feature of our little valley and site of it would not be avoidable for
miles about. The second is EMF pollution: This effect will be stronger the closer one
I57b lives to the lines but to be sure there will be some effect on all who live in the
corridor. These effects among others we may not even be aware of will surely lower
I57c the value of our homes and property.

I57d This project will have significant impact on the wildlife in this area. We have an abundance of rare and protected species that dwell here such as the spotted frog wildlife preserve which is directly in the path of this project. Also, the path of migration of other species such as Canadian geese and bald eagles will be impacted or obstructed. There may be significant legal hurdles that will soon arise in relation to these assertions.

I57e It is also important to note that this great intrusion into our lives, with all of its detriments, brings no direct benefits to our community. The power that is being transmitted is destined for people who live far from here and do not share in the downsides. This will not create any local jobs or improve our quality of life in any way.

I57f Lastly, it is noted that BLM with all of its expertise and experience in such matters has submitted an alternate course for this project that it deems to be a superior and preferred route. I understand that a right-of-way already exist in that direction. It would appear that this direction will have far less impact or damage and would present far less hurdles, both legal and personal, to the Project. I submit that this would be a much better path to pursue.

Sincerely,

Dr. Charles A. Howard

Response(s)

I57a Comment and route preference noted.

I57b The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

I57c As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Additional description has been added to Section 3.2.22 indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights or easements required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process.

I57d Additional information regarding conservation agreements for Columbia spotted frog have been incorporated into Section 3.2.10.4 and Appendix J of the Final EIS. Preconstruction surveys would be conducted for sensitive species to identify locations where relevant selective mitigation measures and design features would be applied.

Impacts on migratory birds are discussed in Section 3.2.9 and would also be reduced through the application of relevant design features and selective mitigation measures.

I57e Comment noted. A description of the Applicant’s interests and objectives is included in Section 1.4 and Appendix A of the EIS. PacifiCorp’s service area within the Project area includes Wyoming and Utah.

Social and economic conditions relevant to the Proposed Action are discussed in Section 3.2.22.

I57f Comment and route preference noted.

Comment(s)

Response(s)

I58

Elizabeth Hunt

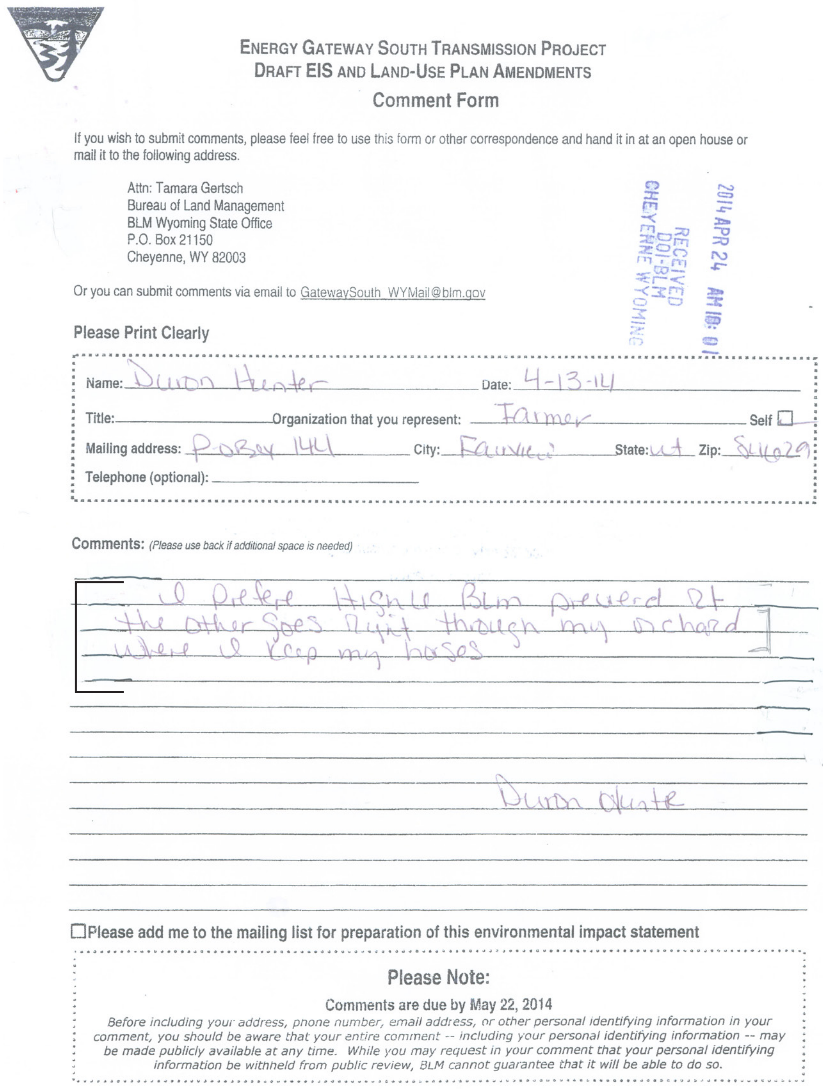
From: **Elizabeth Hunt** <elizabeth.hunt@comcast.net>
Date: Wed, Apr 23, 2014 at 6:07 PM
Subject: Keep the power lines out of Fairview, UT!
To: GatewaySouth_WYMail@blm.gov

I58a Hello, I am writing to express my support for your alternate power line route to the one currently planned to make a mess of Fairview, Utah. While I live in SLC right now, my grandmother lived in Fairview and I go back to visit relatives with some frequency. I would hate to see what those power projects would do to the beauty of that little town, not to mention the property values. So I am grateful you are pushing for the alternative. Thank you! Elizabeth Hunt

I58a Comment and route preference noted.

Comment(s)

I59 | **Duron Hunter**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

2014 APR 24 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Duron Hunter Date: 4-13-14
Title: Organization that you represent: Farmer Self ☐
Mailing address: P.O.Box 144 City: Fauview State: ut Zip: 84629
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I59a I Prefere Hisnle Blm prewerd Rt the other goes Right through my orchard where I keep my horses

Duron Hunte

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

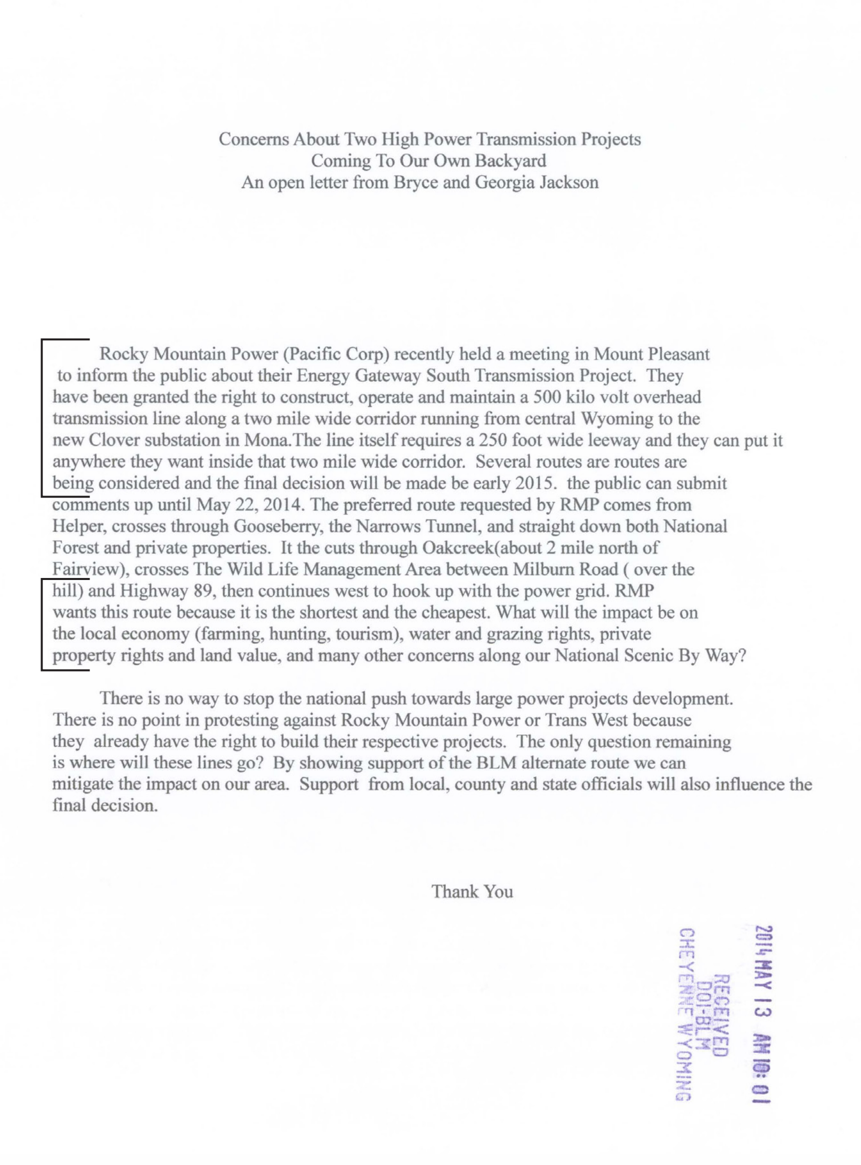
Response(s)

I59a Comment and route preference noted. Should this alternative route be selected, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified that would reduce potential impacts. Additionally, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

Comment(s)

Response(s)

I60 **Bryce and Georgia Jackson**



Concerns About Two High Power Transmission Projects
Coming To Our Own Backyard
An open letter from Bryce and Georgia Jackson

I60a Rocky Mountain Power (Pacific Corp) recently held a meeting in Mount Pleasant
to inform the public about their Energy Gateway South Transmission Project. They
have been granted the right to construct, operate and maintain a 500 kilo volt overhead
transmission line along a two mile wide corridor running from central Wyoming to the
new Clover substation in Mona.The line itself requires a 250 foot wide leeway and they can put it
anywhere they want inside that two mile wide corridor. Several routes are routes are
being considered and the final decision will be made be early 2015. the public can submit
comments up until May 22, 2014. The preferred route requested by RMP comes from
Helper, crosses through Gooseberry, the Narrows Tunnel, and straight down both National
Forest and private properties. It the cuts through Oakcreek(about 2 mile north of
Fairview), crosses The Wild Life Management Area between Milburn Road (over the
I60b hill) and Highway 89, then continues west to hook up with the power grid. RMP
wants this route because it is the shortest and the cheapest. What will the impact be on
the local economy (farming, hunting, tourism), water and grazing rights, private
property rights and land value, and many other concerns along our National Scenic By Way?

There is no way to stop the national push towards large power projects development. There is no point in protesting against Rocky Mountain Power or Trans West because they already have the right to build their respective projects. The only question remaining is where will these lines go? By showing support of the BLM alternate route we can mitigate the impact on our area. Support from local, county and state officials will also influence the final decision.

Thank You

2014 MAY 13 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

I60a A decision has not yet been made by either the BLM or U.S. Forest Service (USFS) on whether or not to grant the Applicant right-of-way across lands they administer. Sections 1.5.7 and 1.5.8 describe the remaining steps in the agencies' review process.

I60b Construction workers could displace tourism temporarily in small towns with limited housing and lodging resources. These issues may be mitigated through working with counties and communities on these issues. These issues are best addressed during the county and/or state permitting phase of the project (e.g., the Wyoming Industrial Siting Permits). Additionally, the Applicant employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

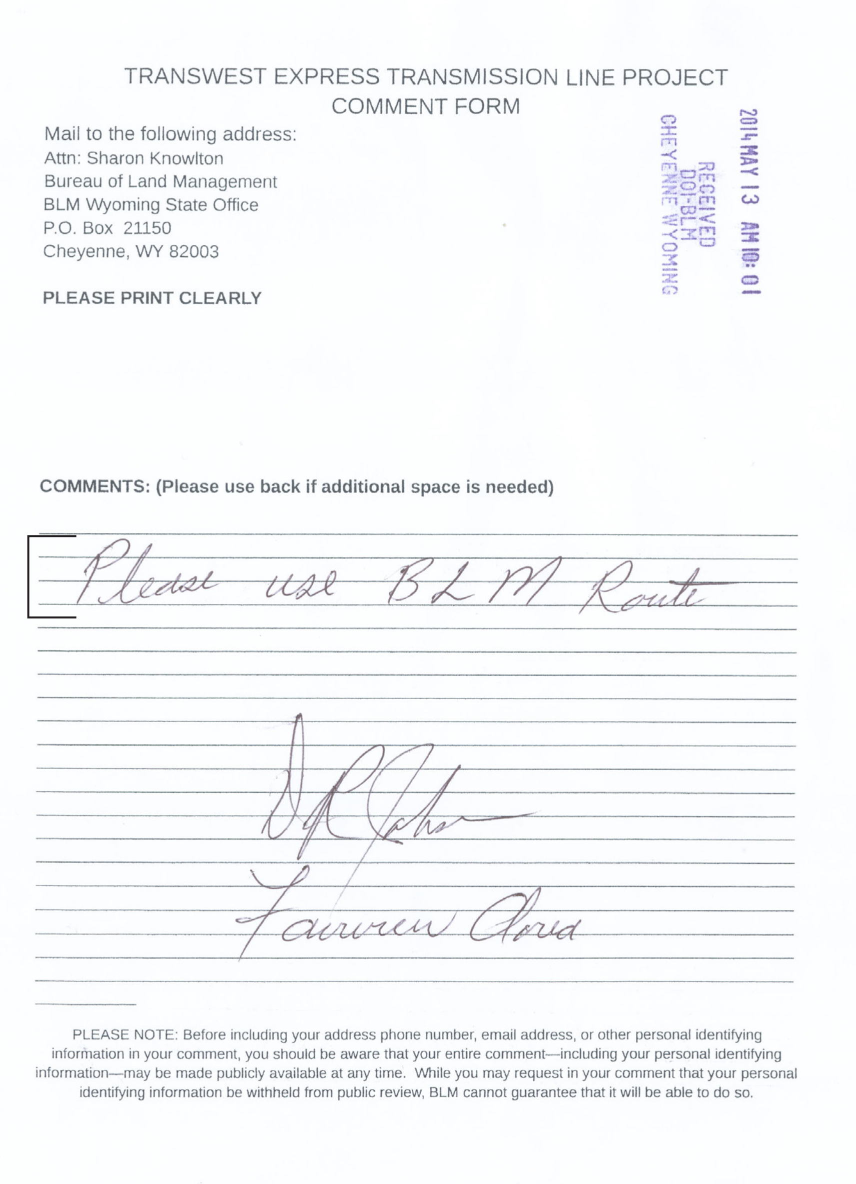
In locations where the Project would dominate a natural setting, high impacts on those views were described in Section 3.2.18 and mapped on MV-21b in Volume II (Map Volume [MV]) of the Draft EIS. Impacts on the natural character of Fairview Canyon and along the National Scenic Byway are also discussed in Section 3.2.18 and mapped on MV-23b. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

It is likely that the presence of the transmission line would affect where people participate in recreational activities in specific locations; however, it is unclear whether their presence would deter hunters and fishermen from visiting the general location, such as Fairview Canyon.

Comment(s)

Response(s)

I61 **D.R. Jackson**



TRANSWEST EXPRESS TRANSMISSION LINE PROJECT
COMMENT FORM

Mail to the following address:
Attn: Sharon Knowlton
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

PLEASE PRINT CLEARLY

COMMENTS: (Please use back if additional space is needed)

I61a Please use BLM Route

Fairview [illegible]

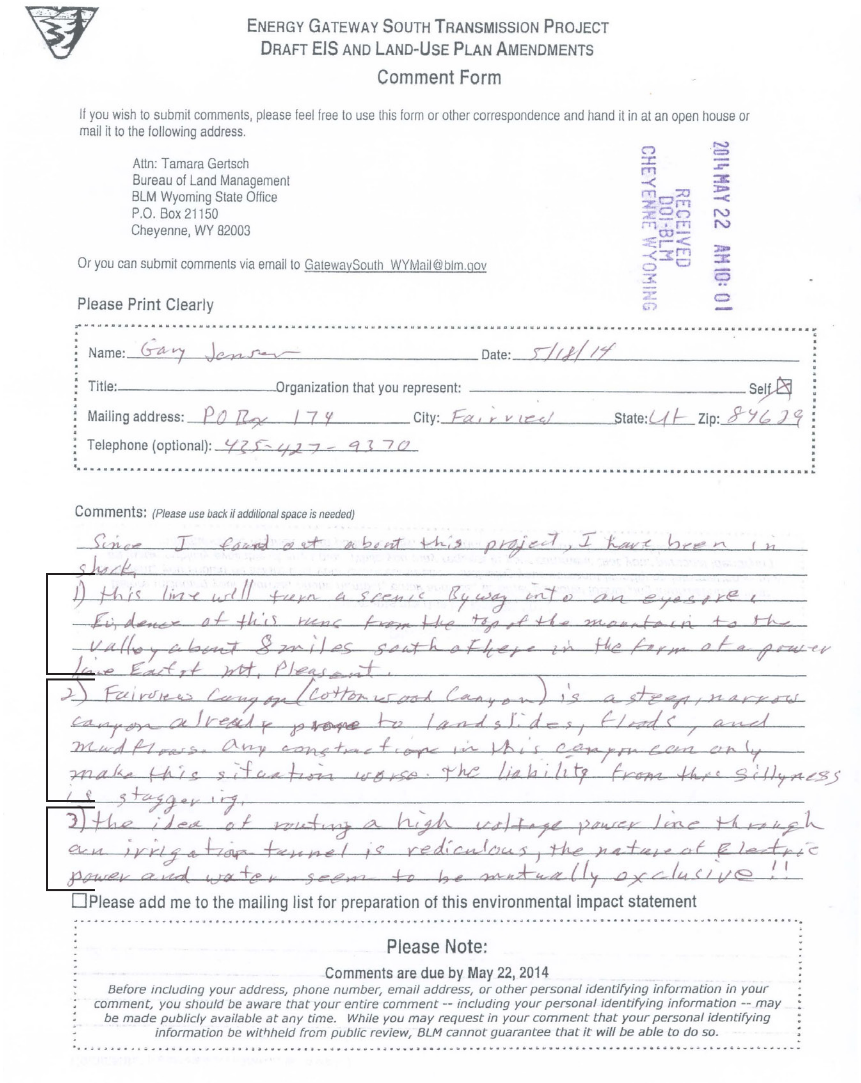
PLEASE NOTE: Before including your address phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I61a Comment and route preference noted.

Comment(s)

Response(s)

I62 **Gary Jensen**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

2014 MAY 22 AM10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Gary Jensen Date: 5/18/14
Title: Organization that you represent: Self ☒
Mailing address: PO Box 174 City: Fairview State: Ut Zip: 84629
Telephone (optional): 435-427-9370

Comments: *(Please use back if additional space is needed)*

Since I found out about this project, I have been in shock.

I62a
1) this line will turn a scenic Byway into an eyesore. Evidence of this runs from the top of the mountain to the valley about 8 miles south of here in the form of a power line East of Mt. Pleasant.

I62b
2) Fairview Canyon (Cottonwood Canyon) is a steep, narrow canyon already prone to landslides, floods, and mud flows. Any construction in this canyon can only make this situation worse. The liability from this sillyness is staggering.

I62c
3) the idea of routing a high voltage power line through an irrigation tunnel is rediculous, the nature of Electric power and water seem to be mutually exclusive!!

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I62a
Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

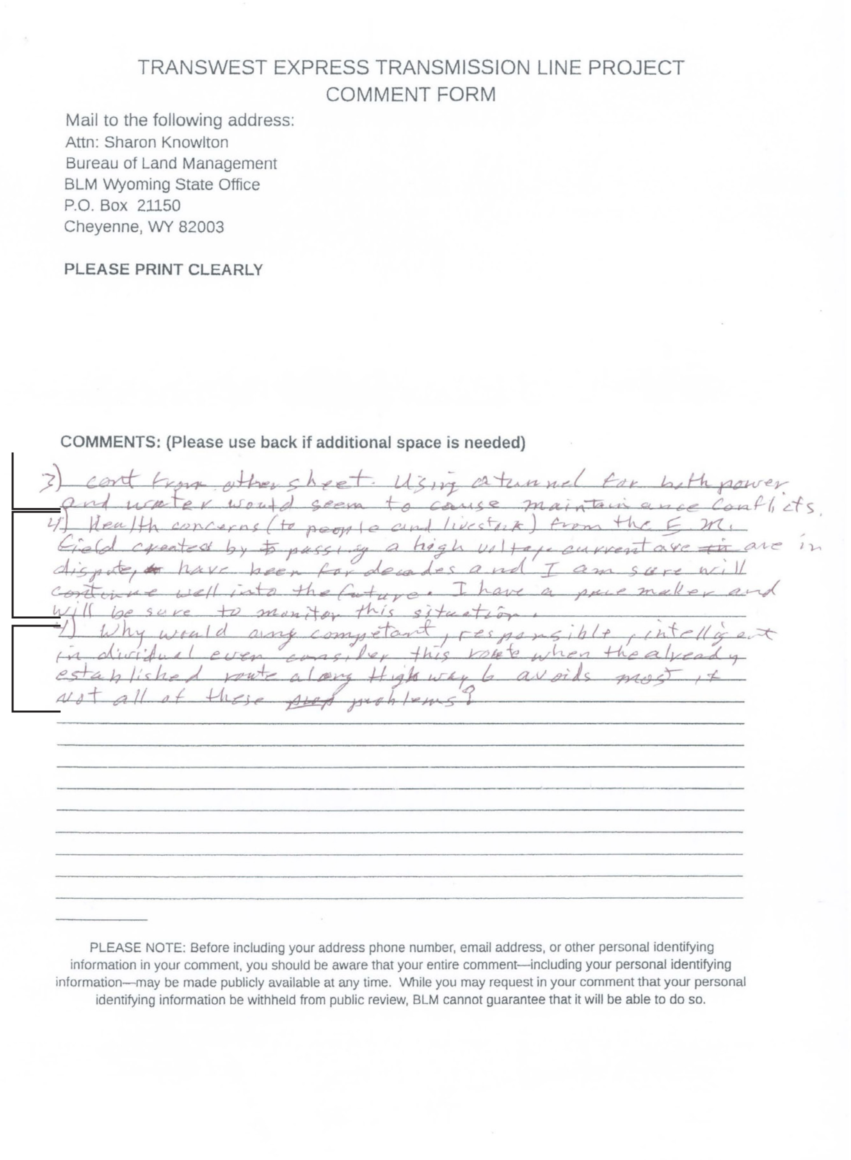
I62b
It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

I62c
Any alternative route or route variation selected for construction would adhere to NESC and Applicant's standard and industries best practices. Any necessary consideration for crossing irrigation ditches would be addressed to safely cross such existing uses.

Comment(s)

Response(s)

I62 **Gary Jensen (cont.)**



TRANSWEST EXPRESS TRANSMISSION LINE PROJECT
COMMENT FORM

Mail to the following address:
Attn: Sharon Knowlton
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

PLEASE PRINT CLEARLY

COMMENTS: (Please use back if additional space is needed)

I62c
3) cont from other sheet. Using a tunnel for both power and water would seem to cause maintainance conflicts.

I62d
4) Health concerns (to people and livestock) from the E.M. Field created by ~~to~~ passing a high voltage current are ~~in~~ are in dispute, have been for decades and I am sure will continue well into the future. I have a pace maker and will be sure to monitor this situation.

I62e
4) Why would any competent, responsible, intelligent individual even consider this route when the already established route along Highway 6 avoids most, if not all of these problems?

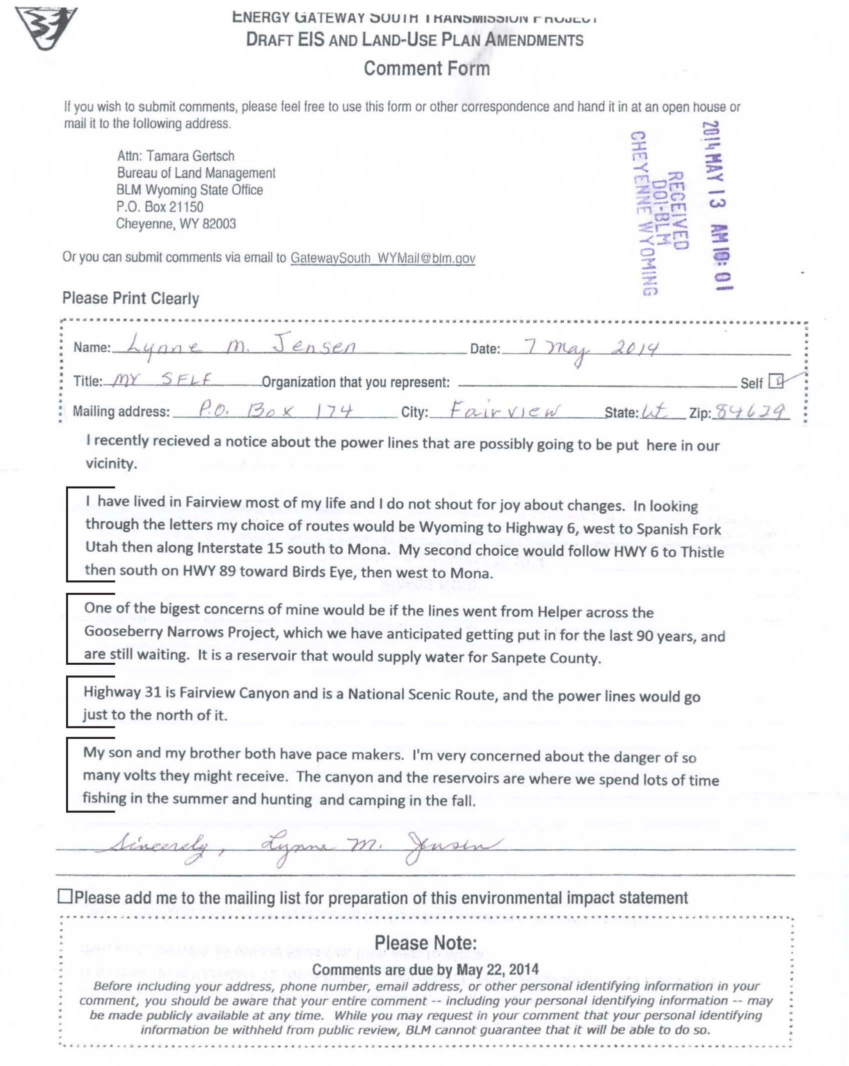
PLEASE NOTE: Before including your address phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I62d The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

I62e Comment and route preference noted.

Comment(s)

I63 **Lynne M. Jensen**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: Lynne M. Jensen Date: 7 May 2014
Title: MY SELF Organization that you represent: Self ☑
Mailing address: P.O. Box 174 City: Fairview State: Ut Zip: 84629

I recently recieved a notice about the power lines that are possibly going to be put here in our vicinity.

I63a I have lived in Fairview most of my life and I do not shout for joy about changes. In looking through the letters my choice of routes would be Wyoming to Highway 6, west to Spanish Fork Utah then along Interstate 15 south to Mona. My second choice would follow HWY 6 to Thistle then south on HWY 89 toward Birds Eye, then west to Mona.

I63b One of the bigest concerns of mine would be if the lines went from Helper across the Gooseberry Narrows Project, which we have anticipated getting put in for the last 90 years, and are still waiting. It is a reservoir that would supply water for Sanpete County.

I63c Highway 31 is Fairview Canyon and is a National Scenic Route, and the power lines would go just to the north of it.

I63d My son and my brother both have pace makers. I'm very concerned about the danger of so many volts they might receive. The canyon and the reservoirs are where we spend lots of time fishing in the summer and hunting and camping in the fall.

Sincerely, Lynne M. Jensen

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I63a Comment and route preference noted.

I63b The Narrows Project is considered a past/present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11. Also, the Narrows Project recreation area is discussed in Section 3.2.12.

I63c Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I63d Comment noted. The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action for environmental protection (specifically, Design Feature 11; refer to Table 2-8), the Applicant will continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. The potential effects of EMF are discussed in greater detail in Section 3.2.23. Potential impacts to visual resources and scenery are discussed in Section 3.2.18. Socioeconomic conditions are discussed in Section 3.2.22.

Comment(s)

I64 **Jordan Jex**

On Mon, Feb 24, 2014 at 4:52 PM, Jordan Jex <jordanjexj@gmail.com> wrote:

To whom it may concern:

As a government entity, you have the power and responsibility to act for an in behalf of the citizens within your stewardship, NOT in the interest of corporations. Be it known to you that it is NOT within the interest of private landowners in Utah that ANY power lines run through I64a Argyle Canyon. You have no claim to eminent domain in this case as there are other plausible routes that cover PUBLIC lands. As this project is to serve the public, then use PUBLIC LAND for your route.

In addition, I am opposed to ANY project that threatens to remove private property and will not even benefit those from whom the property was confiscated.

If this route through Argyle Canyon is approved, you will show that you have no interest in protecting the Constitutional right to own land. There have already been discrepancies in the information presented and will open the government up to a winnable lawsuit for the landowners.

Do not allow the rights of private land owners be trampled because of political motivations. You know I am right. Do the right thing.

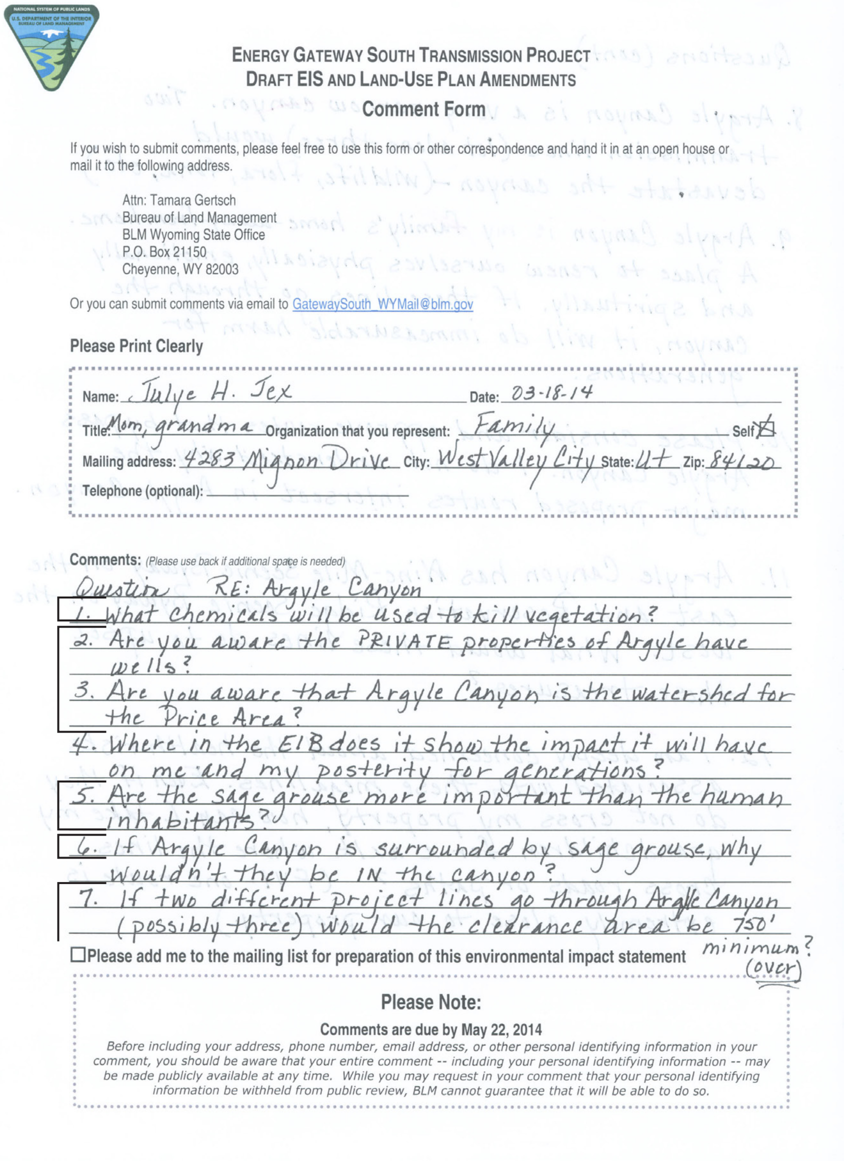
Response(s)

I64a The BLM is responsible for determining whether or not to issue a right-of-way grant on the land it administers and, if so, under what terms and conditions. The BLM has no authority on lands outside of its jurisdiction and is not responsible for enforcing state takings law. If a right-of-way is granted, the Applicant would negotiate individual rights-of-way on private land crossed by the selected route directly with the landowners. The Applicant would work closely with private landowners to microsite the transmission line, determine valuation, and secure easements, consistent with applicable law.

Comment(s)

Response(s)

I65 **Julye H. Jex**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Julye H. Jex Date: 03-18-14
Title: Mom, grandma Organization that you represent: Family Self ☒
Mailing address: 4283 Mignon Drive City: West Valley City State: Ut Zip: 84120
Telephone (optional):

Comments: (Please use back if additional space is needed)

Question RE: Argyle Canyon

I65a 1. What chemicals will be used to kill vegetation?

I65b 2. Are you aware the PRIVATE properties of Argyle have wells?
3. Are you aware that Argyle Canyon is the watershed for the Price Area?
4. Where in the EIB does it show the impact it will have on me and my posterity for generations?

I65c 5. Are the sage grouse more important than the human inhabitants?

I65d 6. If Argyle Canyon is surrounded by sage grouse, why wouldn't they be IN the canyon?

I65e 7. If two different project lines go through Argyle Canyon (possibly three) would the clearance area be 750' minimum?
(over)

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I65a Each transmission line easement across private lands will specify the present and future right to clear the right-of-way and to keep it clear of all trees, brush, vegetation, and methods to be used.

I65b Comment noted. Analysis of impacts on wells in this EIS was restricted to those developed for municipal or agricultural applications, as federal well water quality regulations only pertain to wells that serve 25 individuals or more.

The BLM is aware that Argyle Canyon is part of the watershed for the Price area. Potential direct and indirect impacts on water resources from Project actions are disclosed and analyzed in Section 3.2.4.

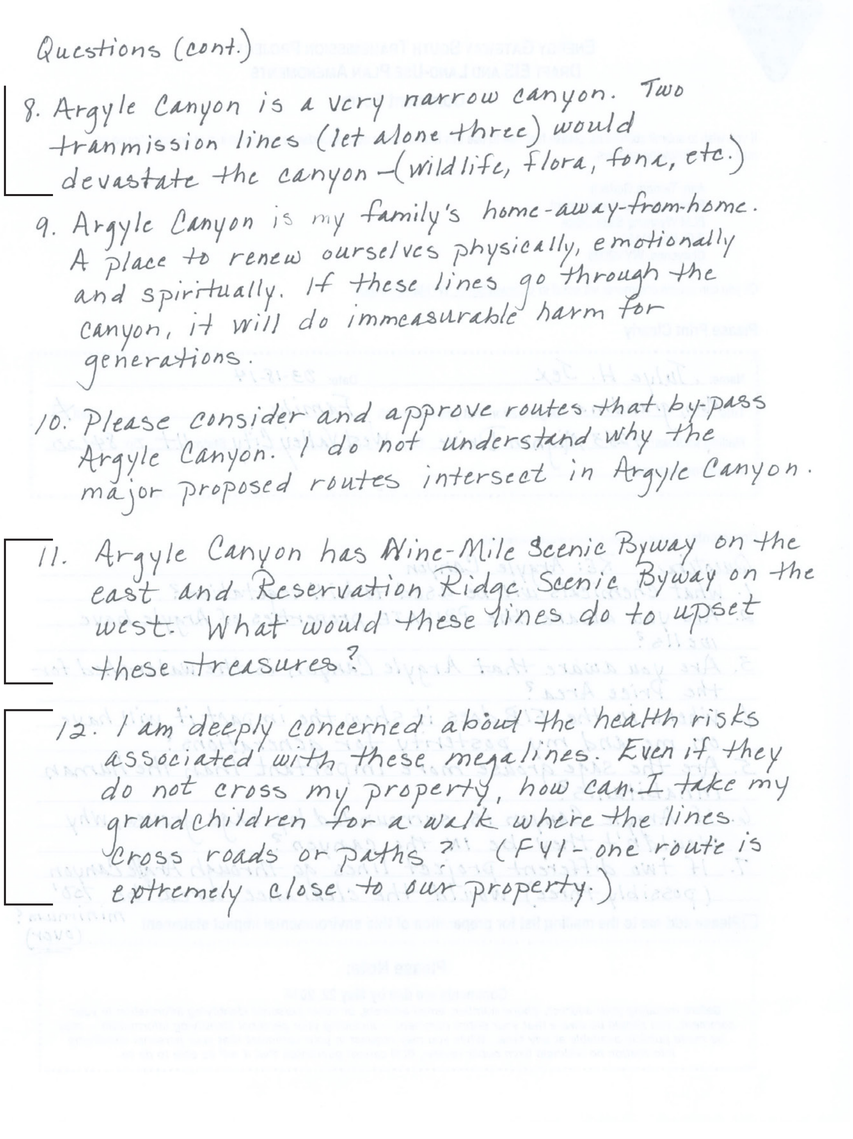
I65c Comment and route preference noted.

I65d Habitat preferences for sage-grouse are described in Appendix J, Section J.6.2.1. The locations of greater sage-grouse populations in Utah are shown on Map 3-5. Data used in the analysis of potential effects on sage-grouse is described in Section 3.2.8.4.

I65e Comment and route preference noted.

Comment(s)

I65 **Julye H. Jex (cont.)**



Questions (cont.)

I65e

8. Argyle Canyon is a very narrow canyon. Two tranmission lines (let alone three) would devastate the canyon – (wildlife, flora, fona, etc.)

9. Argyle Canyon is my family's home-away-from-home. A place to renew ourselves physically, emotionally and spiritually. If these lines go through the canyon, it will do immeasurable harm for generations.

10. Please consider and approve routes that by-pass Argyle Canyon. I do not understand why the major proposed routes intersect in Argyle Canyon.

I65f

11. Argyle Canyon has Nine-Mile Scenic Byway on the east and Reservation Ridge Scenic Byway on the west. What would these lines do to upset these treasures?

I65g

12. I am deeply concerned about the health risks associated with these megalines. Even if they do not cross my property, how can I take my grandchildren for a walk where the lines cross roads or paths? (FYI - one route is extremely close to our property.)

Response(s)

I65f

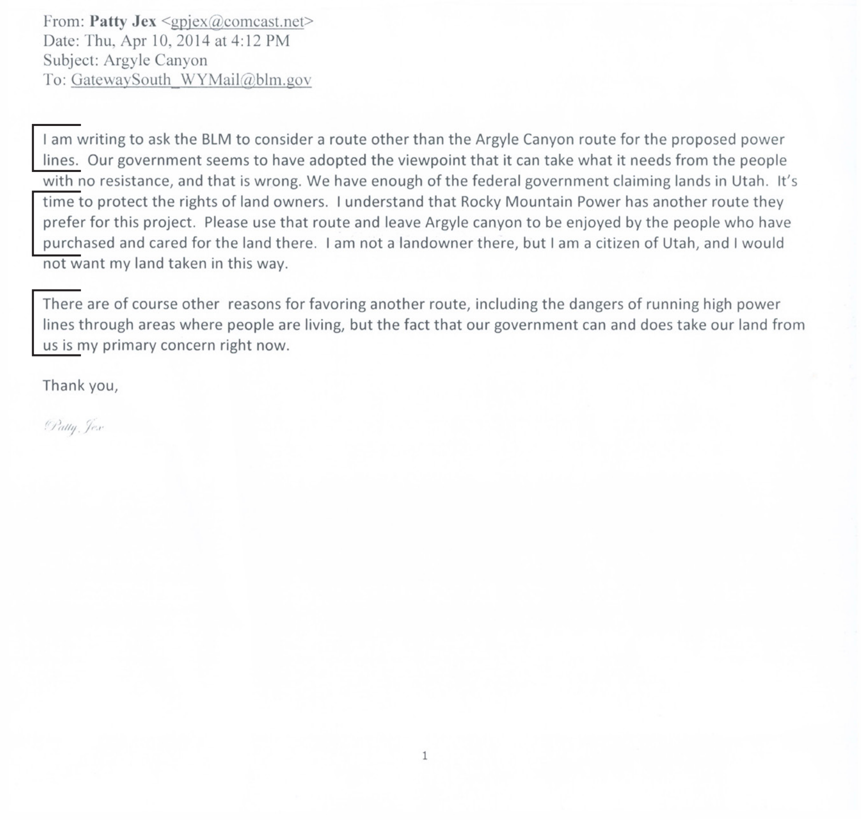
Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from both the Nine Mile Canyon Scenic Backway and Reservation Ridge Scenic Backway, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. All feasible selective mitigation measures were applied to reduce these impacts to the extent practicable.

I65g

Within a short distance from the edges of the right-of-way, the levels of EMF diminish to those commonly encountered in communities. The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

Comment(s)

I66 **Patty Jex**



From: **Patty Jex** <gpjex@comcast.net>
Date: Thu, Apr 10, 2014 at 4:12 PM
Subject: Argyle Canyon
To: GatewaySouth_WYMail@blm.gov

I66a I am writing to ask the BLM to consider a route other than the Argyle Canyon route for the proposed power lines. Our government seems to have adopted the viewpoint that it can take what it needs from the people with no resistance, and that is wrong.

I66b We have enough of the federal government claiming lands in Utah. It's time to protect the rights of land owners. I understand that Rocky Mountain Power has another route they prefer for this project. Please use that route and leave Argyle canyon to be enjoyed by the people who have purchased and cared for the land there. I am not a landowner there, but I am a citizen of Utah, and I would not want my land taken in this way.

I66c There are of course other reasons for favoring another route, including the dangers of running high power lines through areas where people are living, but the fact that our government can and does take our land from us is my primary concern right now.

Thank you,

Patty Jex

1

Response(s)

I66a Comment and route preference noted.

I66b Comment and route preference noted.

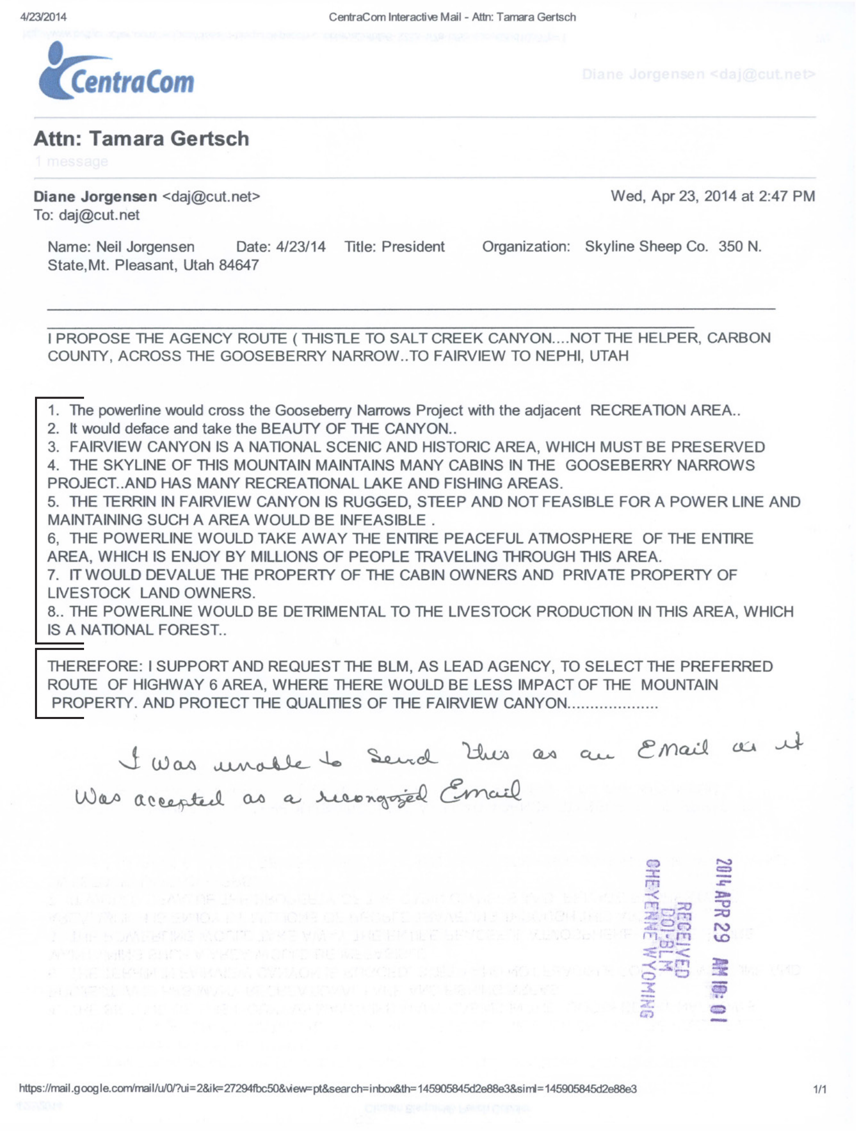
I66c Any alternative route or route variation selected for construction would adhere to NESC and Applicant's standard and industries best practices.

The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

Comment(s)

Response(s)

I67 **Neil Jorgensen**



4/23/2014 CentraCom Interactive Mail - Attn: Tamara Gertsch

CentraCom

Diane Jorgensen <daj@cut.net>

Attn: Tamara Gertsch

1 message

Diane Jorgensen <daj@cut.net> Wed, Apr 23, 2014 at 2:47 PM
To: daj@cut.net

Name: Neil Jorgensen Date: 4/23/14 Title: President Organization: Skyline Sheep Co. 350 N. State,Mt. Pleasant, Utah 84647

I PROPOSE THE AGENCY ROUTE (THISTLE TO SALT CREEK CANYON....NOT THE HELPER, CARBON COUNTY, ACROSS THE GOOSEBERRY NARROW..TO FAIRVIEW TO NEPHI, UTAH

I67a

1. The powerline would cross the Gooseberry Narrows Project with the adjacent RECREATION AREA..
2. It would deface and take the BEAUTY OF THE CANYON..
3. FAIRVIEW CANYON IS A NATIONAL SCENIC AND HISTORIC AREA, WHICH MUST BE PRESERVED
4. THE SKYLINE OF THIS MOUNTAIN MAINTAINS MANY CABINS IN THE GOOSEBERRY NARROWS PROJECT..AND HAS MANY RECREATIONAL LAKE AND FISHING AREAS.
5. THE TERRIN IN FAIRVIEW CANYON IS RUGGED, STEEP AND NOT FEASIBLE FOR A POWER LINE AND MAINTAINING SUCH A AREA WOULD BE INFEASIBLE .
6, THE POWERLINE WOULD TAKE AWAY THE ENTIRE PEACEFUL ATMOSPHERE OF THE ENTIRE AREA, WHICH IS ENJOY BY MILLIONS OF PEOPLE TRAVELING THROUGH THIS AREA.
7. IT WOULD DEVALUE THE PROPERTY OF THE CABIN OWNERS AND PRIVATE PROPERTY OF LIVESTOCK LAND OWNERS.
8.. THE POWERLINE WOULD BE DETRIMENTAL TO THE LIVESTOCK PRODUCTION IN THIS AREA, WHICH IS A NATIONAL FOREST..

I67b

THEREFORE: I SUPPORT AND REQUEST THE BLM, AS LEAD AGENCY, TO SELECT THE PREFERRED ROUTE OF HIGHWAY 6 AREA, WHERE THERE WOULD BE LESS IMPACT OF THE MOUNTAIN PROPERTY. AND PROTECT THE QUALITIES OF THE FAIRVIEW CANYON...................

I was unable to Send this as an Email as it Was accepted as a recongozed Email

2014 APR 29 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

https://mail.google.com/mail/u/0/?ui=2&ik=27294fbc50&view=pt&search=inbox&th=145905845d2e88e3&siml=145905845d2e88e3 1/1

I67a

Due to the largely intact landscape character, steep slopes, and dense vegetation in this area along with foreground views from residences and recreation areas, high impacts were assigned along most of this alternative route on the Wasatch Plateau. All feasible selective mitigation measures were applied to reduce these impacts to the extent practicable. Based on high impacts and other resource effects this alternative route was not selected as the Agency Preferred Alternative.

Additionally, there are 10 residences north of Fairview, Utah, within 0.25 mile of this alternative route that would likely have some impacts on property values. With open viewscapes and little vegetation, there could be impacts on property values farther than 0.25 mile from the alternative route. As a result of these high visual impacts and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

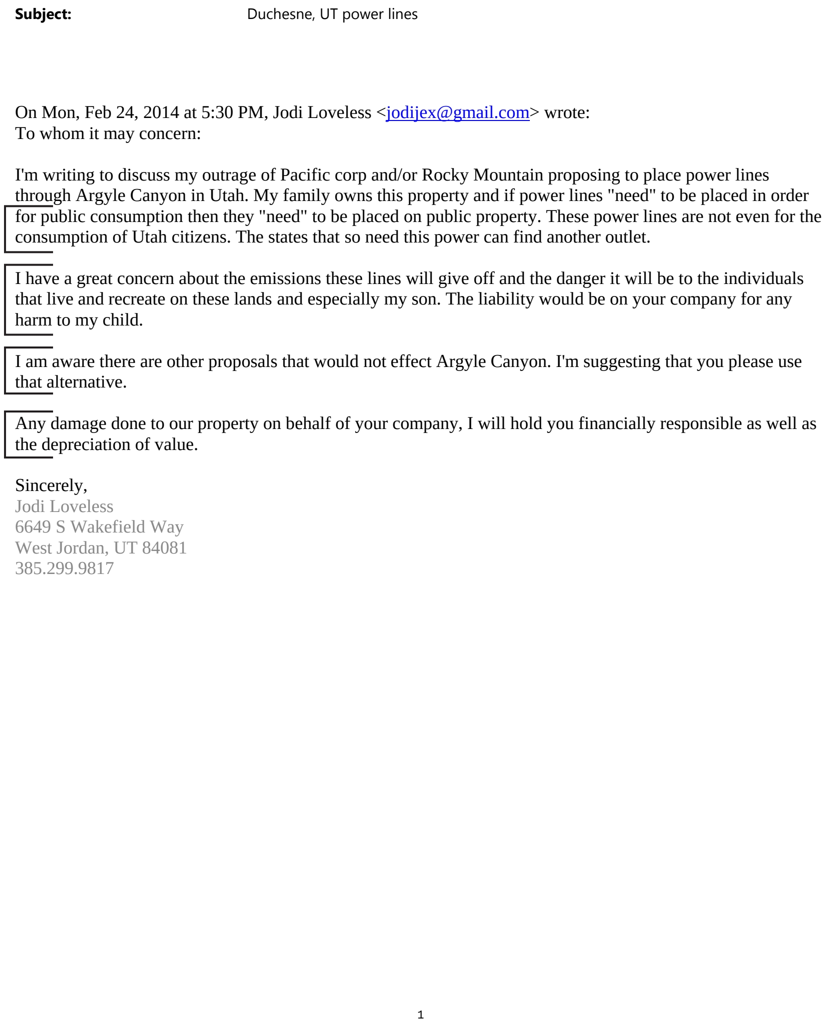
I67b

Comment and route preference noted.

Exhibit P7
Individuals

Comment(s)

I68 **Jodi Loveless**



Subject: Duchesne, UT power lines

On Mon, Feb 24, 2014 at 5:30 PM, Jodi Loveless <jodijex@gmail.com> wrote:
To whom it may concern:

I'm writing to discuss my outrage of Pacific corp and/or Rocky Mountain proposing to place power lines through Argyle Canyon in Utah. My family owns this property and if power lines "need" to be placed in order

I68a for public consumption then they "need" to be placed on public property. These power lines are not even for the consumption of Utah citizens. The states that so need this power can find another outlet.

I68b I have a great concern about the emissions these lines will give off and the danger it will be to the individuals that live and recreate on these lands and especially my son. The liability would be on your company for any harm to my child.

I68c I am aware there are other proposals that would not effect Argyle Canyon. I'm suggesting that you please use that alternative.

I68d Any damage done to our property on behalf of your company, I will hold you financially responsible as well as the depreciation of value.

Sincerely,
Jodi Loveless
6649 S Wakefield Way
West Jordan, UT 84081
385.299.9817

1

Response(s)

I68a Comment noted. A description of the Applicant's interests and objectives is included in Section 1.4 and Appendix A of the EIS. PacifiCorp's service area in the Project area includes Wyoming and Utah.

Social and economic conditions relevant to the Proposed Action are discussed in Section 3.2.22.

I68b The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

I68c Comment and route preference noted.

I68d As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Additional description has been added to Section 3.2.22 indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights or easements required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process.

Comment(s)

I69 | **Trevor and Jodi Loveless**

From: **Jodi Loveless** <jodijex@gmail.com>
Date: Thu, May 15, 2014 at 10:12 AM
Subject: Argyle Canyon
To: "utsomail@blm.gov" <utsomail@blm.gov>

To whom it may concern,

I69a I'm writing to express my outrage in the proposed plan to place power lines through our PERSONAL and PRIVATE in Argyle Canyon. I am aware that there are other options for it to go through public lands and not have to impede on our right to own our property and do with it what we choose. Not to mention the effects that it will have on the environment and the habitat of the area. I ask that you please reconsider placing it through the private property of Argyle Canyon.

Sincerely,
Trevor and Jodi Loveless
385-229-9817

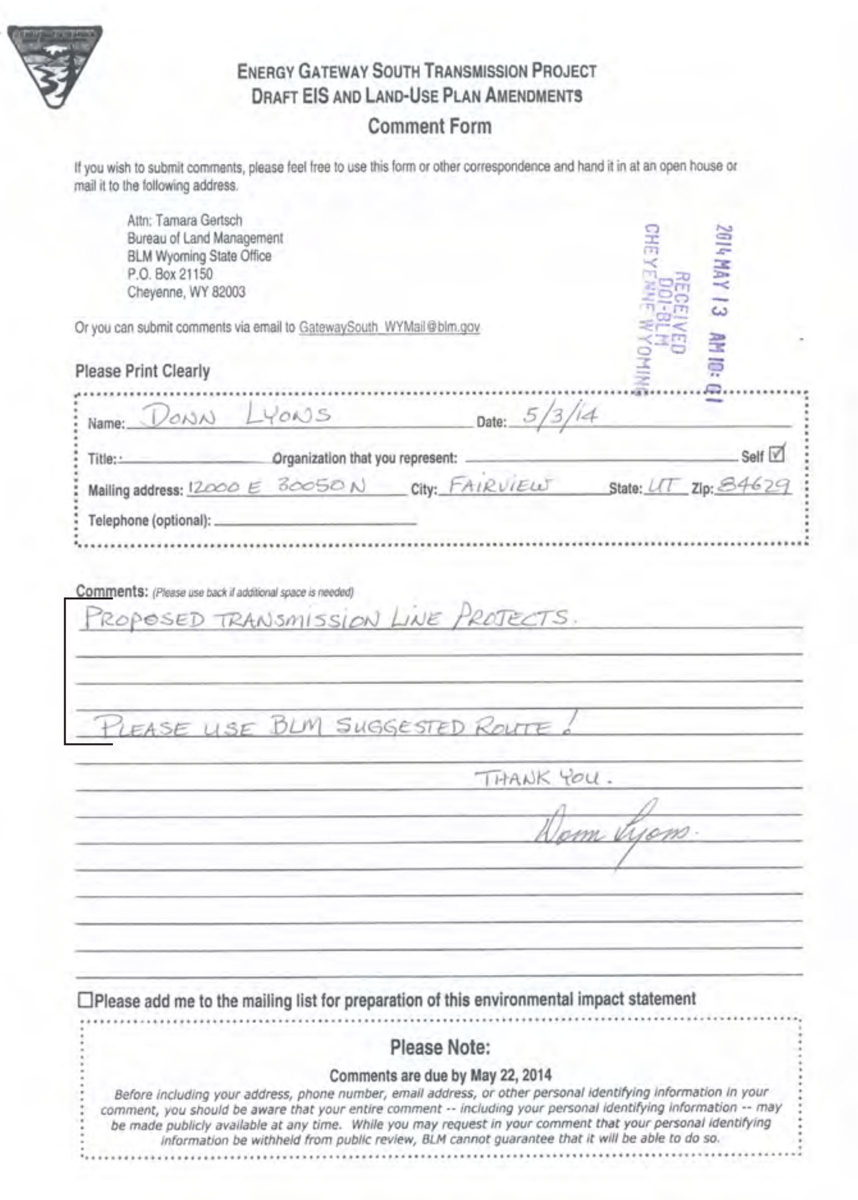
Response(s)

I69a Comment and route preference noted.

Comment(s)

Response(s)

I70 **Don Lyons**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 MAY 13 AM 10:01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: DONN LYONS Date: 5/3/14

Title: Organization that you represent: Self ☑

Mailing address: 12000 E 30050 N City: FAIRVIEW State: UT Zip: 84629

Telephone (optional):

Comments: (Please use back if additional space is needed)

I70a PROPOSED TRANSMISSION LINE PROTECTS.

PLEASE USE BLM SUGGESTED ROUTE!

THANK YOU.

Donn Lyons.

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

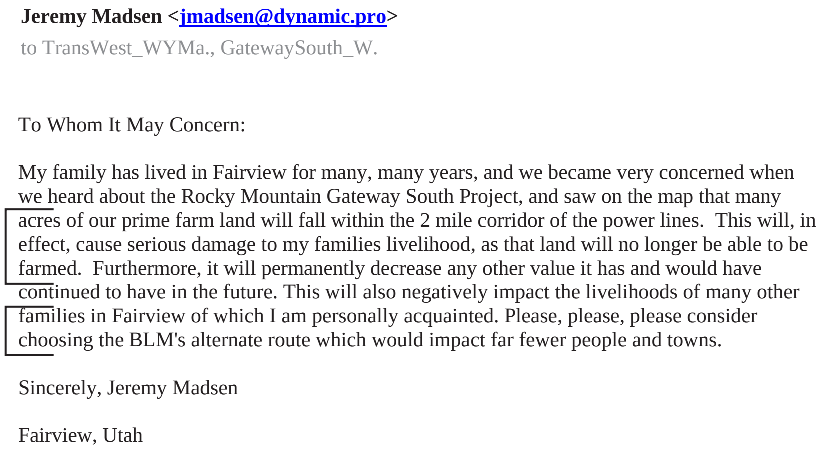
Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I70a Comment and route preference noted.

Comment(s)

I71 **Jeremy Madsen**



Jeremy Madsen <jmadsen@dynamic.pro>
to TransWest_WYMa., GatewaySouth_W.

To Whom It May Concern:

My family has lived in Fairview for many, many years, and we became very concerned when we heard about the Rocky Mountain Gateway South Project, and saw on the map that many

I71a acres of our prime farm land will fall within the 2 mile corridor of the power lines. This will, in effect, cause serious damage to my families livelihood, as that land will no longer be able to be farmed. Furthermore, it will permanently decrease any other value it has and would have continued to have in the future. This will also negatively impact the livelihoods of many other

I71b families in Fairview of which I am personally acquainted. Please, please, please consider choosing the BLM's alternate route which would impact far fewer people and towns.

Sincerely, Jeremy Madsen

Fairview, Utah

Response(s)

I71a To reduce potential impacts on agricultural irrigation systems, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

I71b Comment and route preference noted.

Comment(s)

Response(s)

I72 **Terry Madsen**

From: **Terry Madsen** <blakem@cut.net>
Date: Wed, Apr 30, 2014 at 3:29 PM
Subject: Rocky Mountain Gateway South Project
To: GatewaySouth_WYMail@blm.gov

To Whom It May Concern:

I72a My husband has lived and worked all his life (65 years) on our farm North of Fairview, Utah. We recently heard about the Rocky Mountain Gateway South Project, and saw on the map that many acres of our prime irrigated fields which provide hay for our cattle, will fall within the 2 mile corridor which we understand will be sprayed to kill all growth due to fire hazard. This major loss of income and major INCOME of ugly towers, possible cell phone reception problems near the towers (we rely on our cell phones to communicate during hay season and for emergencies with calving), and numerous other environmental and economic problems, causes us to urge you to choose the BLM's alternate route which would impact far fewer people and towns.

Sincerely, Terry E. Madsen
Fairview, Utah

I72a Comment and route preference noted.

Comment(s)

Response(s)

I73 **John B. Magnuson**

Energy Gateway South Transmission Project
Draft EIS and Land-Use Plan Amendments

Comment Form

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
GatewaySouth_WYMail@blm.gov

Name: John B. Magnuson Date: 03/18/2014
Title: Landowner Organization that you represent: Myself and my family
Mailing Address: 7 So. 2nd Ave City: Helper State: Utah Zip: 84526
Telephone: 435-472-3226

Comments:

In reviewing the various routes and in talking to representatives from the BLM and Rocky Mountain Power it seems to me everything has been taken into consideration except common sense and the wishes and feelings of the landowners along the various routes in the Argyle Canyon area. As evidence of this I point to routes U432, U434, U513, U520 and U512. If the goal was to impact as many private landowners as possible these would be routes of choice. The landowners in this area have spent many, many years and in some cases generations, along with uncountable dollars, to carve a place out of wilderness for their families to enjoy.

I73a On the other hand we have routes like U411 and U406 that would minimally impact private landowners and their families but seem barely in the equation because of the impact to sage grouse. I don't believe the sage grouse is an endangered species and I don't believe the impact to sage grouse habitat would be any greater along these routes than along routes U432, U434, U513, U520 and U512. I believe if studies were done on the sage grouse along these routes we would find more sage grouse habitat being impacted than by routes U411 and U406. I base this on the fact that the routes U432, U434, U513, U520 and U512 are on private property and as such are not studied to reflect what habitat and species will be impacted by the construction of this power line.

I73b Based on my personal observations and the observations of many other landowners the impact on the sage grouse along routes U432, U434, U513, U520 and U512 would be as great or greater than along U411 and U406 because the population along these routes is significant. I implore the BLM and Rocky Mountain Power to use some of their God given common sense and choose a route that will be friendly to the sage grouse as well as the landowners in the area. This route could not include U432, U434, U513, U520 and U512.

Thank you for the opportunity to comment on this project.

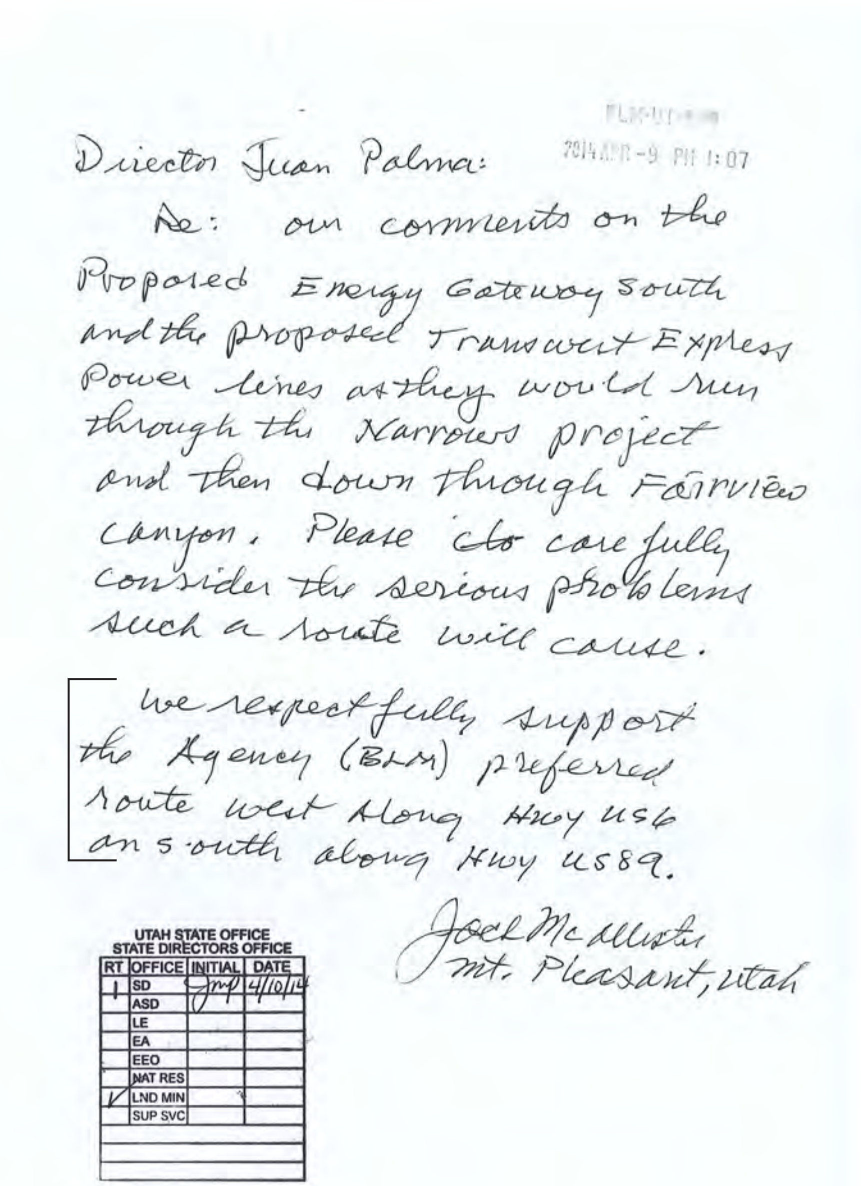
I73a Comment and route preference noted.

I73b Comment and route preference noted. Data used in the analysis of potential effects on sage-grouse is described in Section 3.2.8.4 The locations of greater sage-grouse populations in Utah are shown on Map 3-5.

Comment(s)

Response(s)

I74 **Jack McAllister – Letter Dated April 2, 2014**



2014 APR -9 PM 1:07

Director Juan Palma:

Re: our comments on the Proposed Energy Gateway South and the proposed Transwest Express Power lines as they would run through the Narrows project and then down through Fairview canyon. Please do care fully consider the serious problems such a route will cause.

I74a We respectfully support the Agency (BLM) preferred route west along Hwy US6 an south along Hwy US89.

Jack McAllister
Mt. Pleasant, Utah

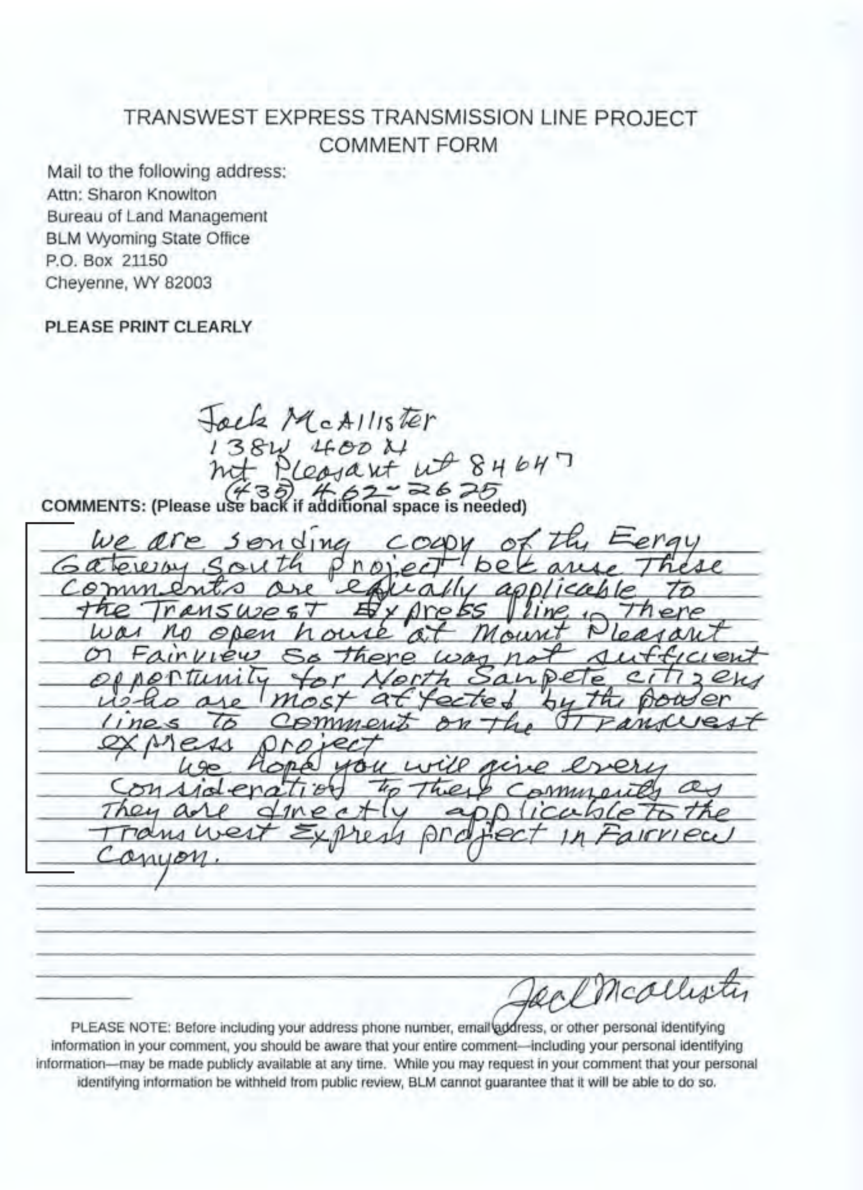
UTAH STATE OFFICE
STATE DIRECTORS OFFICE

RT	OFFICE	INITIAL	DATE
1	SD	JMP	4/10/14
	ASD		
	LE		
	EA		
	EEO		
	NAT RES		
✓	LND MIN		
	SUP SVC		

I74a Comment and route preference noted.

Comment(s)

I74 **Jack McAllister – Letter Dated April 2, 2014 (cont.)**



TRANSWEST EXPRESS TRANSMISSION LINE PROJECT
COMMENT FORM

Mail to the following address:
Attn: Sharon Knowlton
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

PLEASE PRINT CLEARLY

Jack McAllister
138W 400N
mt Pleasant ut 84647
(435) 462-2625

COMMENTS: (Please use back if additional space is needed)

I74b We are sending coapy of the Eergy Gateway South project because These comments are equally applicable to the Transwest Express line. There was no open house at Mount Pleasant or Fairview So there was not sufficient opportunity for North Sanpete citizens who are most affected by the power lines to comment on the Transwest express project

We hope you will give every consideration to these comments as They are directly applicable to the Transwest Express project in Fairview Canyon.

Jack McAllister

PLEASE NOTE: Before including your address phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

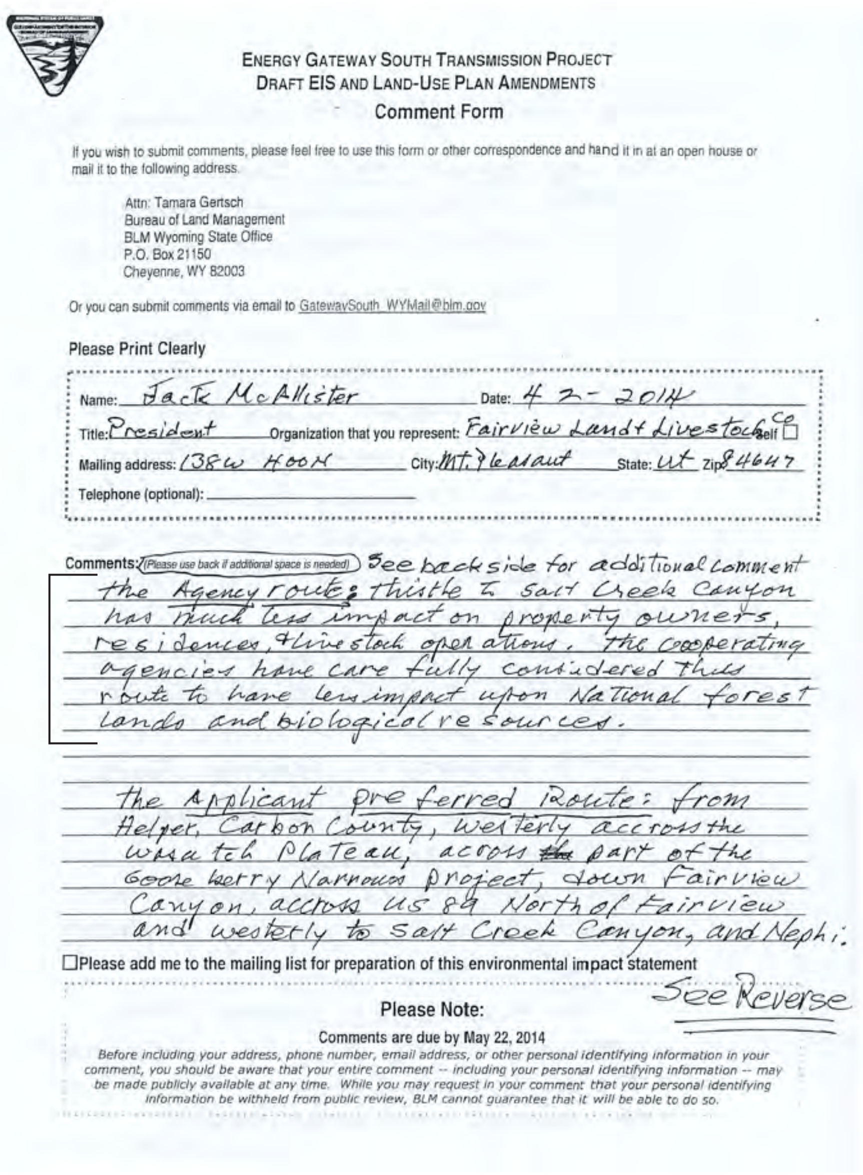
Response(s)

I74b Comment and route preference noted.

Comment(s)

Response(s)

I74 **Jack McAllister – Letter Dated April 2, 2014 (cont.)**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Jack McAllister Date: 4 2 - 2014
Title: President Organization that you represent: Fairview Land & Livestock Co Self ☐
Mailing address: 138 w 400 N City: Mt. Pleasant State: Ut Zip: 84647
Telephone (optional):

Comments: (Please use back if additional space is needed) See back side for additional comment

I74c

the Agency route: thistle to Salt Creek Canyon has much less impact on property owners, residences, & livestock operations. the cooperating agencies have care fully considered this route to have less impact upon National forest lands and biological resources.

the Applicant preferred Route: from Helper, Carbon County, westerly accross the wasatch Plateau, across ~~the~~ part of the Goose berry Narrows project, down Fairview Canyon, accross US 89 North of Fairview and westerly to Salt Creek Canyon, and Nephi:

☐ Please add me to the mailing list for preparation of this environmental impact statement

See Reverse

Please Note:

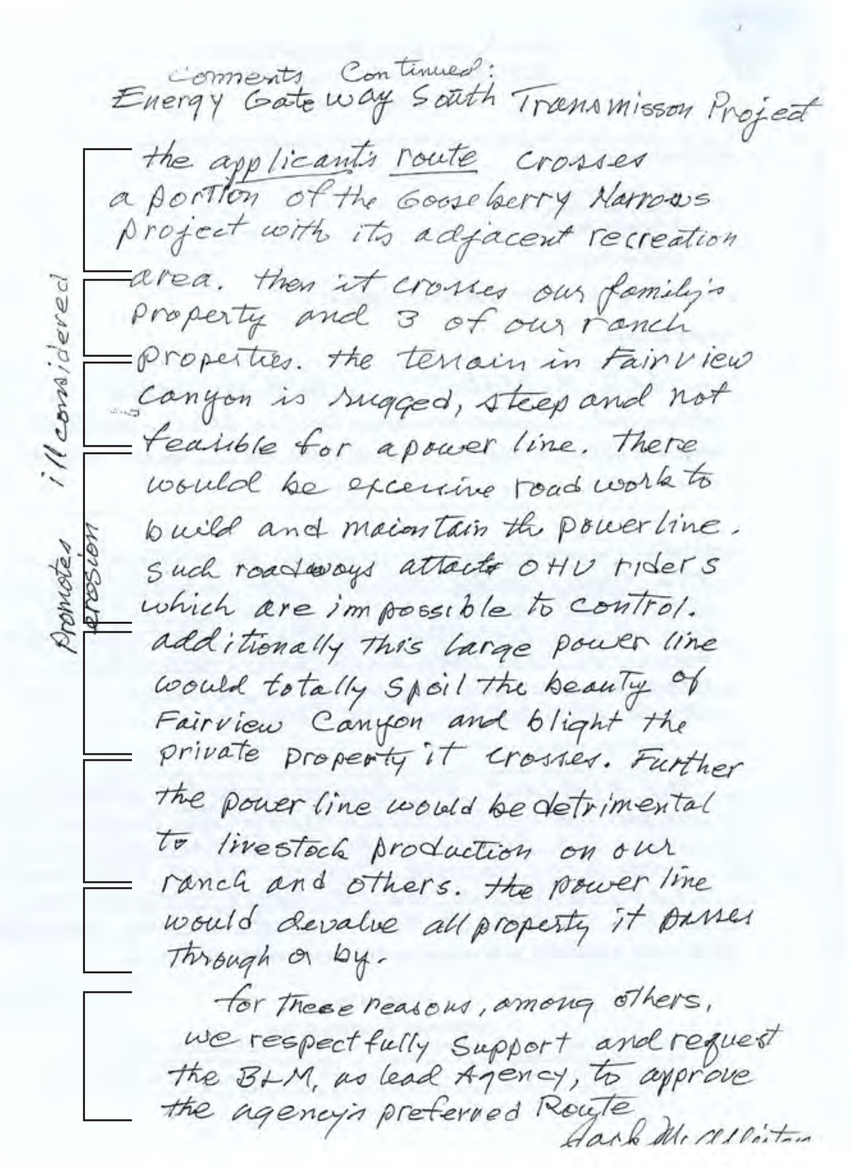
Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I74c Comment and route preference noted.

Comment(s)

I74 **Jack McAllister – Letter Dated April 2, 2014 (cont.)**



comments Continued:
Energy Gateway South Transmisson Project

I74d
the applicant's route crosses a portion of the Gooseberry Narrows project with its adjacent recreation area.

I74e
then it crosses our family's property and 3 of our ranch properties.

I74f
the terrain in Fairview Canyon is rugged, steep and not feasible for a power line.

I74g
there would be excessive road work to build and maintain the powerline. such roadways attracts OHV riders which are impossible to control.

ill considered

Promotes erosion

I74h
additionally this large power line would totally spoil the beauty of Fairview Canyon and blight the private property it crosses.

I74i
Further the power line would be detrimental to livestock production on our ranch and others.

I74j
the power line would devalue all property it passes through or by.

I74k
for these reasons, among others, we respectfully support and request the BLM, as lead Agency, to approve the agency's preferred Route

Jack McAllister

Response(s)

I74d
The Narrows Project is considered a past or present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11, and the Narrows Project recreation area is discussed in Section 3.2.12.

I74e
Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

I74f
Comment and route preference noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

I74g
Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATV), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 of the Final EIS for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

I74h
See next page for response to I74h.

I74i
See next page for response to I74i.

I74j
See next page for response to I74j.

I74k
Comment and route preference noted.

Comment(s)

Response(s) - continued

I74 **Jack McAllister – Letter Dated April 2, 2014 (cont.)**

I74h

Due to the largely intact landscape character, steep slopes, and dense vegetation in this area along with foreground views from residences and recreation areas, high impacts were assigned along most of this alternative route on the Wasatch Plateau. All feasible selective mitigation measures were applied to reduce these impacts to the extent practicable. Based on high impacts and other resource effects this alternative route was not selected as the Agency Preferred Alternative.

As described in the Impacts to Property Values section of Section 3.2.22, property values can certainly be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. There are 10 residences north of Fairview, Utah, located within 0.25 mile of the alternatives routes and route variations likely to be affected by the proximity of the transmission line. These alternative routes and route variations were not selected as the Agency Preferred Alternative.

I74i

To reduce potential impacts on livestock production, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations, agricultural production, and livestock production.

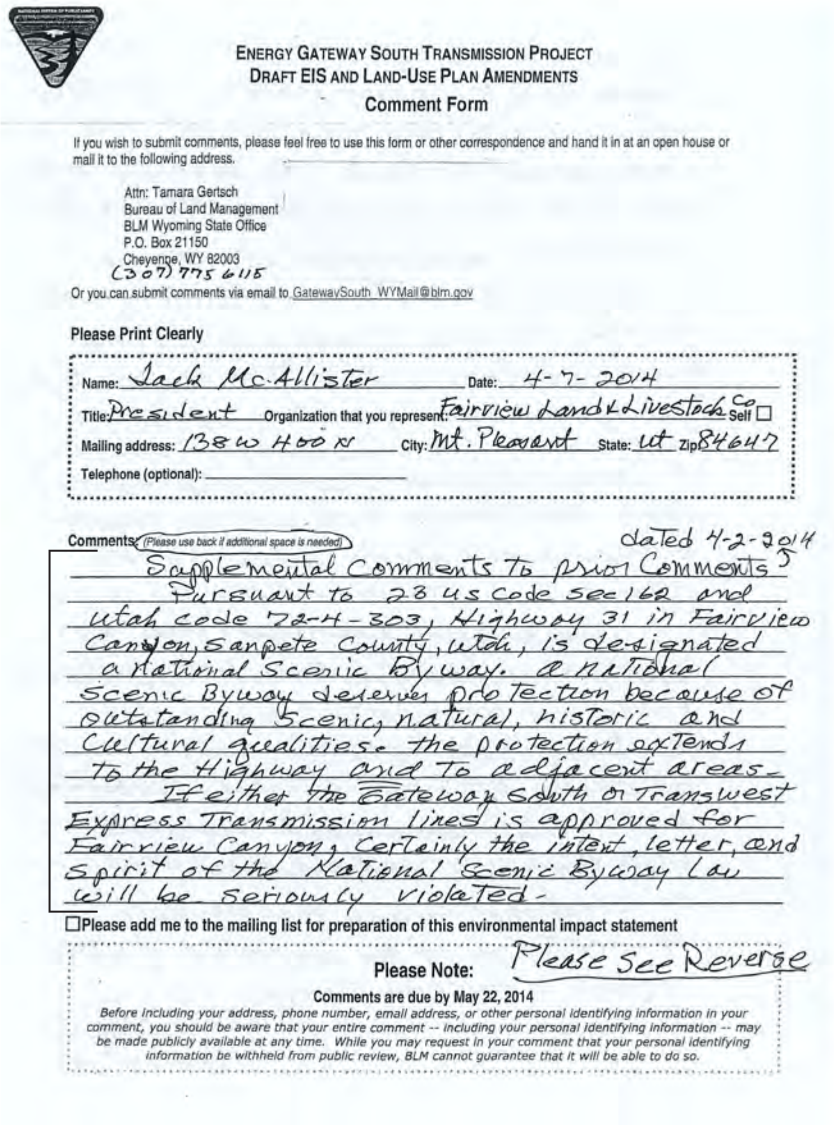
I74j

As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Additional description has been added to Section 3.2.22 indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights or easements required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process.

Comment(s)

Response(s)

I75 **Jack McAllister – Letter Dated April 7, 2014**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
(307) 775 6115

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Jack McAllister Date: 4-7-2014
Title: President Organization that you represent: Fairview Land & Livestock Co Self ☐
Mailing address: 138 W 400 N City: Mt. Pleasant State: Ut Zip 84647
Telephone (optional): ________

Comments: (Please use back if additional space is needed) dated 4-2-2014

I75a Supplemental Comments to prior Comments Pursuant to 23 US Code Sec 162 and Utah code 72-4-303, Highway 31 in Fairview Canyon, Sanpete County, Utah, is designated a National Scenic Byway. a National Scenic Byway deserves protection because of outstanding scenic, natural, historic and cultural qualities. the protection extends to the Highway and to adjacent areas. If either the Gateway South or Transwest Express Transmission lines is approved for Fairview Canyon, Certainly the intent, letter, and spirit of the National Scenic Byway law will be seriously violated.

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note: Please See Reverse

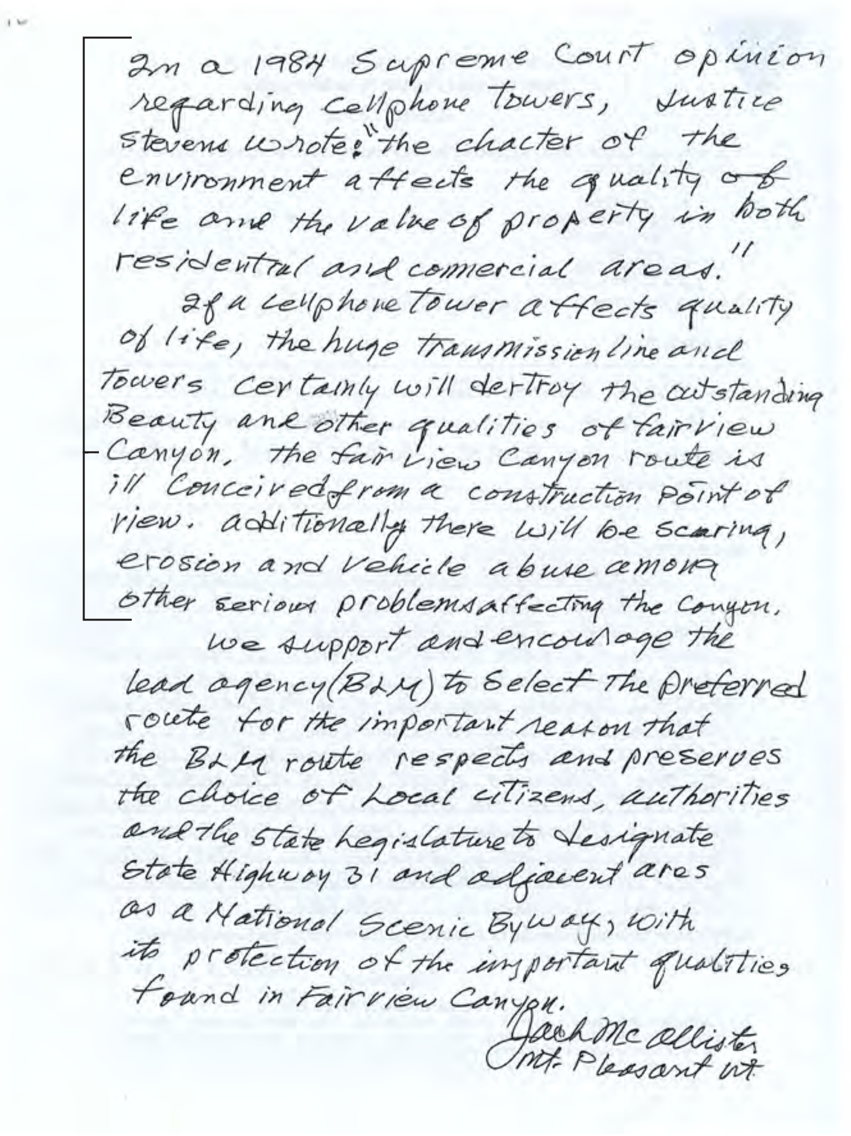
Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I75a Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

Comment(s)

I75 **Jack McAllister – Letter Dated April 7, 2014 (cont.)**



I75b

In a 1984 Supreme Court opinion regarding cellphone towers, Justice Stevens wrote: "the chacter of the environment affects the quality of life and the value of property in both residential and comercial areas."

If a cellphone tower affects quality of life, the huge transmission line and towers certainly will destroy the outstanding Beauty and other qualities of fairview Canyon.

I75c

the fair view Canyon route is ill Conceived from a construction point of view. additionally there will be scaring, erosion and Vehicle abuse among other serious problems affecting the Canyon.

We support and encourage the lead agency (BLM) to Select The preferred route for the important reason that the BLM route respects and preserves the choice of Local citizens, authorities and the State legislature to designate State Highway 31 and adjacent ares as a National Scenic Byway, with its protection of the important qualities found in Fairview Canyon.

Jack McAllister
Mt. Pleasant Ut.

Response(s)

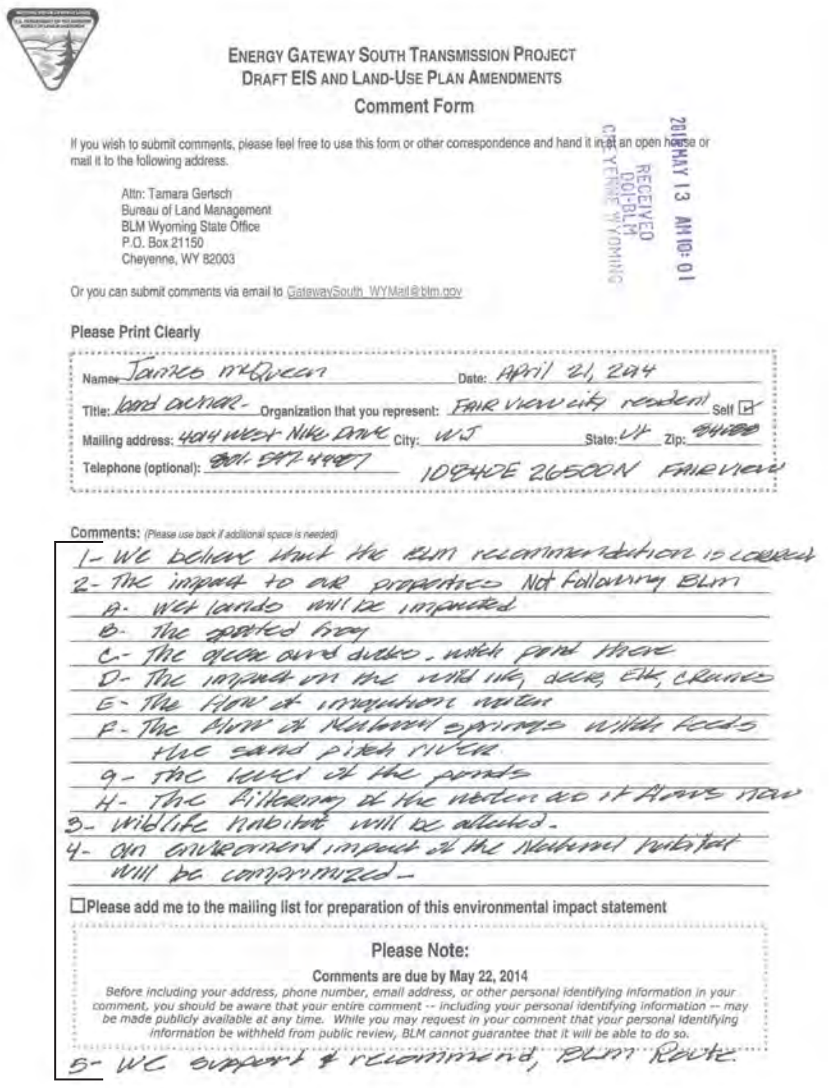
I75b Comment and route preference noted. The potential visual effects are discussed in Section 3.2.18.5.4. Potential impacts on property values are discussed in Section 3.2.22.5.2.

I75c Comment and route preference noted.

Comment(s)

Response(s)

I76 | **James McQueen**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

2014 MAY 13 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: James McQueen Date: April 21, 2014
Title: land owner- Organization that you represent: FAIR view city resident Self ☑
Mailing address: 4014 West Nike Drive City: WJ State: UT Zip: 84088
Telephone (optional): 801-547-4407 108 40E 26500N FAIRview

Comments: (Please use back if additional space is needed)

I76a
1- We believe that the BLM recommendation is correct
2- The impact to our properties Not following BLM
A- Wet lands will be impacted
B- The spotted frog
C- The geese and ducks, which pond there
D- The impact on the wild life, deer, Elk, cranes
E- The flow of irrigation water
F- The flow of natural springs which feeds the sand pitch river
G- The level of the ponds
H- The filtering of the water as it flows now
3- Wildlife habitat will be affected.
4- an environment impact of the natural habitat will be compromized-

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

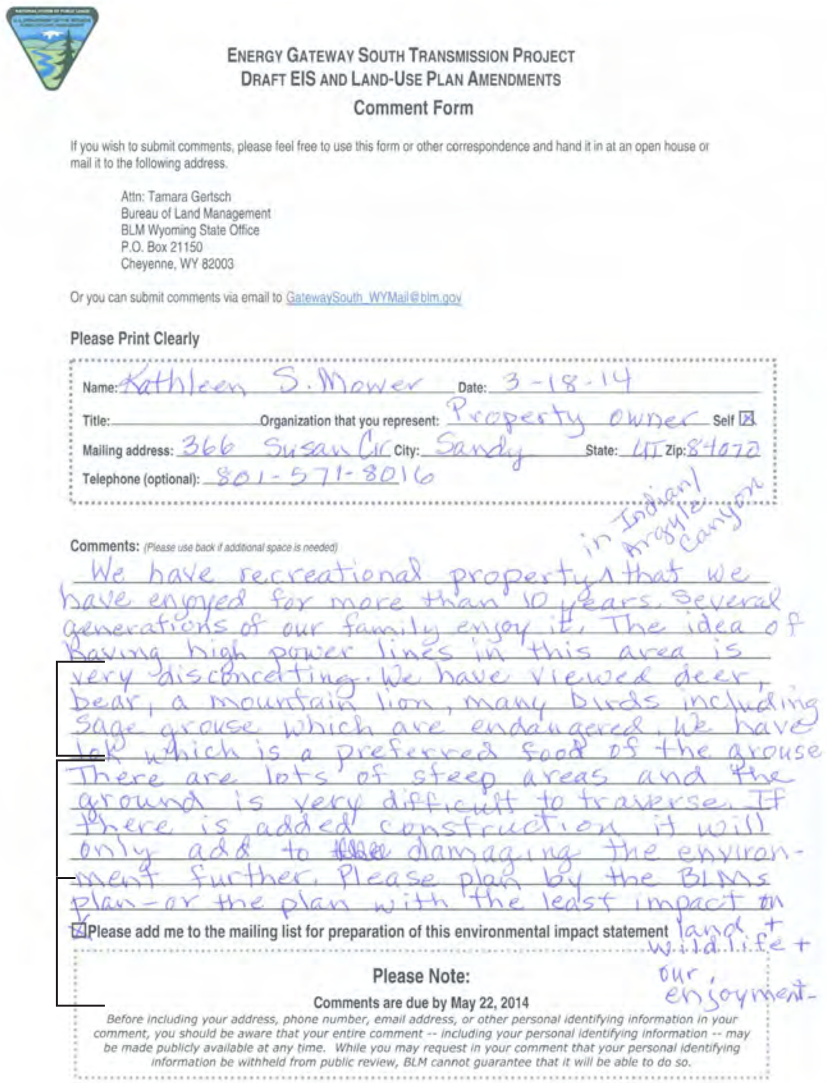
5- We support & recommend, BLM Route.

I76a Comment and route preference noted.

Comment(s)

Response(s)

I77 **Kathleen S. Mower**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Kathleen S. Mower Date: 3-18-14
Title: Organization that you represent: Property owner Self ☒
Mailing address: 366 Susan Cir City: Sandy State: UT Zip: 84070
Telephone (optional): 801-571-8016

Comments: *(Please use back if additional space is needed)*

We have recreational property in Indian/Argyle Canyon that we have enjoyed for more than 10 years. Several generations of our family enjoy it. The idea of having high power lines in this area is

I77a very disconcerting. We have viewed deer, bear, a mountain lion, many birds including sage grouse which are endangered. We have lek which is a preferred food of the grouse

I77b There are lots of steep areas and the ground is very difficult to traverse. If there is added construction it will only add to ~~the~~ damaging the environment further.

I77c Please plan by the BLMs plan - or the plan with the least impact on land + wildlife + our enjoyment.

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I77a Comment and route preference noted.

I77b Comment and route preference noted. It is possible construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5.

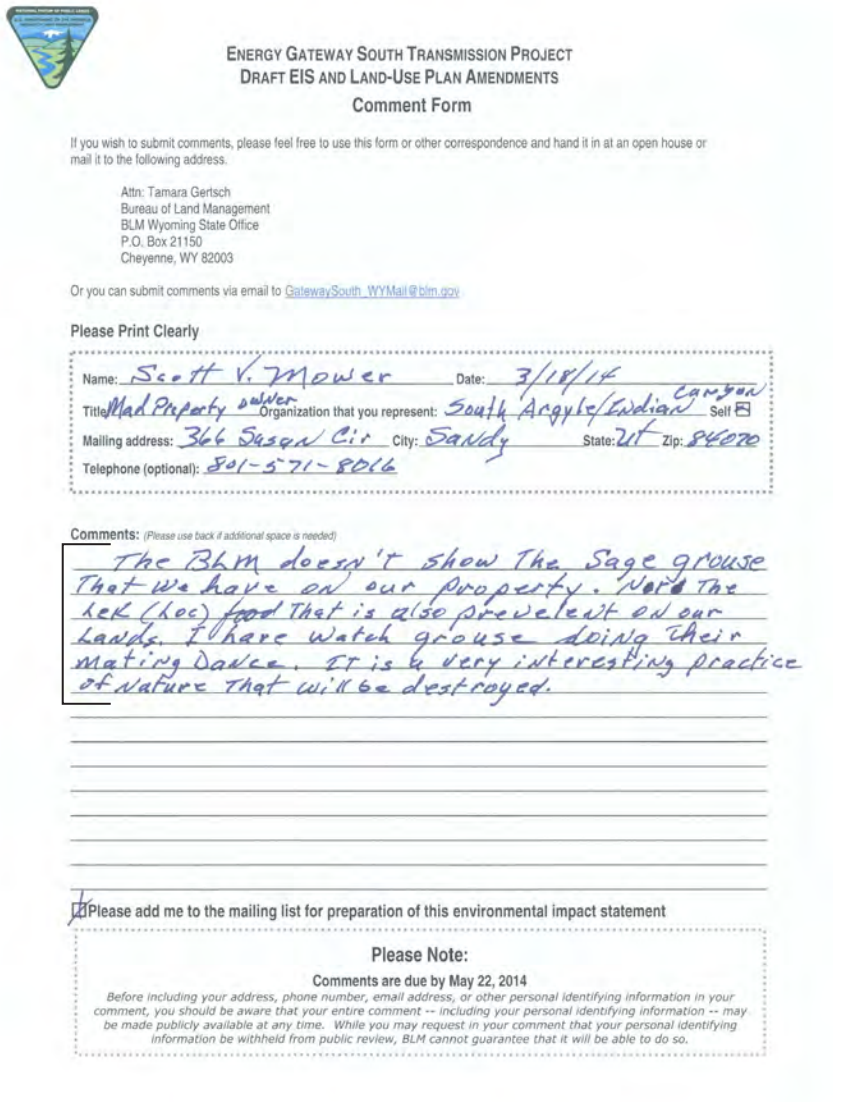
Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATV), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

I77c Comment and route preference noted.

Comment(s)

I78 **Scott V. Mower**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Scott V. Mower Date: 3/18/14
Title: Mad Property owner Organization that you represent: South Argyle/Indian canyon Self ☒
Mailing address: 366 Susan Cir City: Sandy State: UT Zip: 84070
Telephone (optional): 801-571-8016

Comments: *(Please use back if additional space is needed)*

I78a

The BLM doesn't show The Sage grouse That we have on our property. Nor The lek (loc) ~~food~~ That is also prevelent on our Lands. I have watch grouse doing their mating Dance. It is a very interesting practice of Nature That will be destroyed.

☑ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

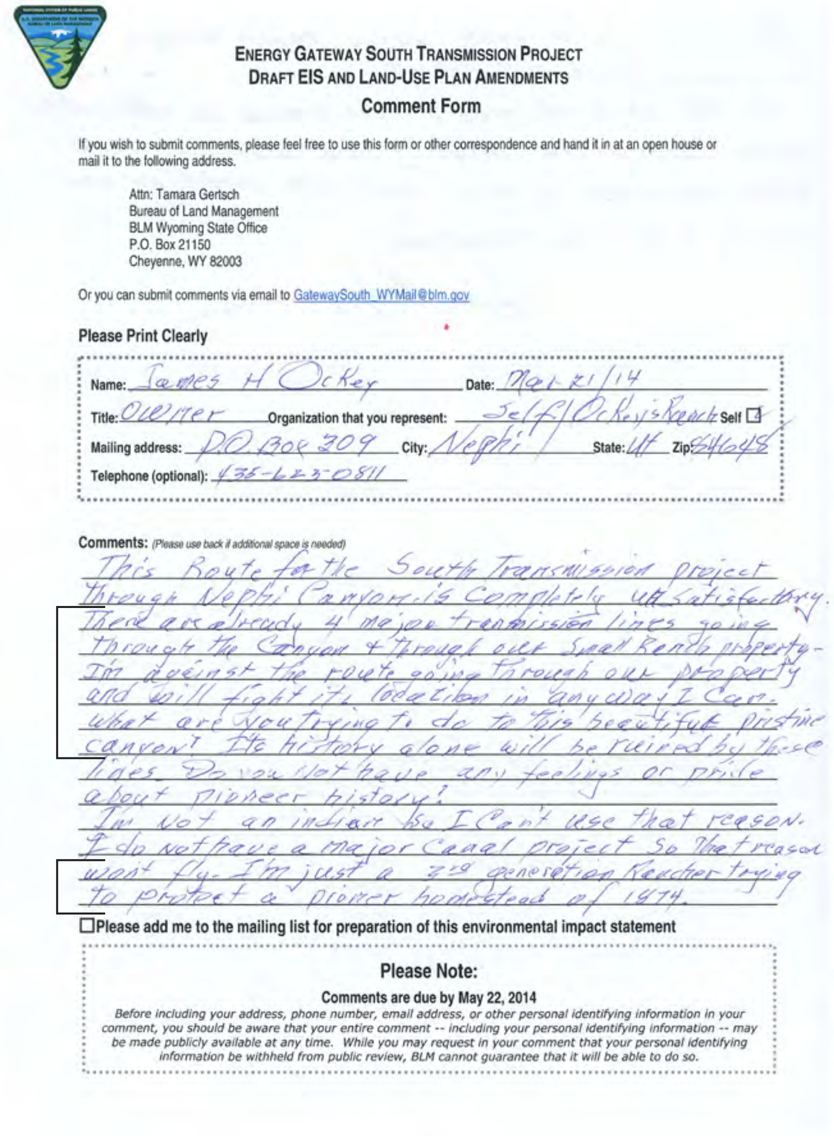
I78a

Comment and route preference noted. Data used in the analysis of potential effects on sage-grouse is described in Section 3.2.8.4 The locations of greater sage-grouse populations in Utah are shown on Map 3-5.

Comment(s)	Response(s)
I79 **Pete Norris**	
From: Pete Nomis [mailto:pknomis@gmail.com] **Sent:** Tuesday, February 25, 2014 9:58 AM **To:** Megan Dunford **Subject:** Power line proposal information	
I79a Hello Megan I have received the DVD you have sent with all the information regarding the power lines running through Utah my name is PeterNomis I have a pretty decent chunk of property on the north side of highway 40 according to your guyses proposal it looks like it runs right through or near my property on the north side in Fruitland utah my mother is marilyn Nomis please bear with me as I am handicap I am blind almost 100 percent and it is very hard for me to email I am doing my best thank you for understanding I hope that I am talking to the right person please let me know if I am NOT and point me in the direction of who I would need to talk to you we are interested in finding out more about your powerline and the proposition area is it is going to be running through I am very interested in and seeing what we can come up with to me it looks like your proposal is going to run right through some parts of my property I am interested to know when the meetings are where they will be taking place and what days and time I hope that we can help each other in this if there is a phone number that I may contact you are the person that is in charge of this please let me know and please let me know if I have the right person again thank you very much and have a wonderful day look forward to hearing from you Peter Nomis	I79a Comment and route preference noted.

Comment(s)

I80 **James H. Ockey**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: James H Ockey Date: Mar 21/14
Title: Owner Organization that you represent: Self/Ockey's Ranch Self ☑
Mailing address: P.O. Box 309 City: Nephi State: Ut Zip: 84648
Telephone (optional): 435-623-0811

Comments: *(Please use back if additional space is needed)*

This Route for the South Transmission project through Nephi Canyon. is Completely unSatisfactory.

I80a

There are already 4 major transmission lines going through the Canyon & through our Small Ranch property- I'm against the route going through our property and will fight it's location in any way I Can. what are you trying to do to this beautiful pristine canyon? Its history alone will be ruined by these lines. Do you not have any feelings or pride about pioneer history?

I'm not an indian so I Can't use that reason. I do not have a major Canal project So that reason

I80b

won't fly. I'm just a 3rd generation Rancher trying to protect a pioneer homestead of 1874.

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I80a

The location of the alternative route is based on colocating with these existing transmission lines to reduce the cumulative effects of separating the lines and occupying a larger portion of the canyon. Along the east side of the canyon, the alternative route parallels an existing transmission line to the north of the highway. Before the existing line reaches the Nebo Loop Scenic Byway, the alternative route crosses to the south side of the highway to parallel two existing transmission lines, reducing impacts on the scenic road and residences in Salt Creek Canyon.

I80b

Based on existing literature, file searches, and cultural resources inventories, there may be potential cultural resources impacts along the alternative routes and route variations crossing the Nephi Canyons and adjacent areas. If one of these alternative routes or route variations is selected (COUT or COUT BAX alternative routes or route variations), a Class III intensive pedestrian inventory (survey) of the selected route, associated roads, substations, and ancillary facilities would be conducted. All cultural resources sites identified would be documented and evaluated for eligibility for the NRHP and appropriate selective mitigation measures identified in consultation with involved state and federal land-managing agencies and private landowners.

Comment(s)

I80 | **James H. Ockey (cont.)**

There must be a route where major damage through The Canyon would not result.

I80c On the enclosed map I have drawn an alternate Route through our property That would eliminate The congestion & also have little impact on our Property & ranching operation.

James Ockey

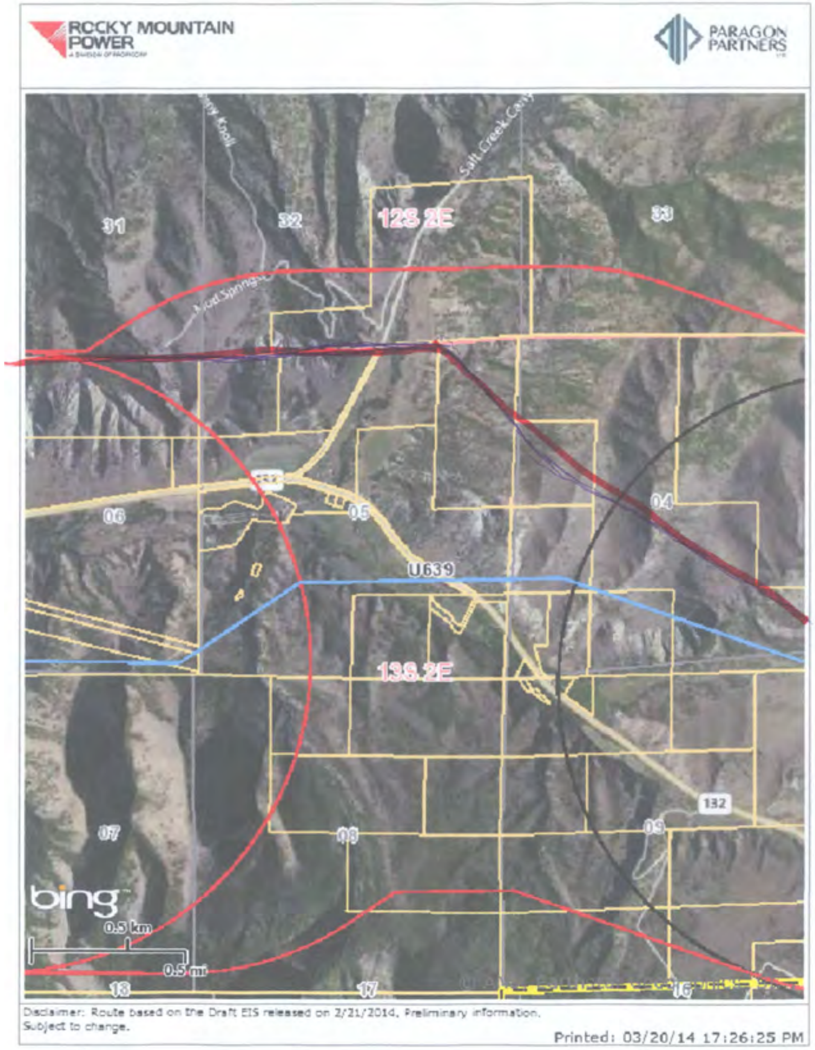
Response(s)

I80c Comment and route preference noted.

Comment(s)

Response(s)

I80 | **James H. Ockey (cont.)**



Disclaimer: Route based on the Draft EIS released on 2/21/2014. Preliminary information. Subject to change.

Printed: 03/20/14 17:26:25 PM

Comment(s)

Response(s)

I81 **Marilyn Oden**

From: **marilyn** <acoolelk2@gmail.com>
Date: Tue, May 20, 2014 at 9:29 AM
Subject: NW colorado transmission lines........
To: tgertsch@blm.gov

Tamara Gertsch, BLM National Project Manager

I81a

for a hundred years electric companies' reclamation beneath high powered transmission lines and around poles have been exceptional all across the usa …… they cross all kinds of wild life, domestic livestock, family pets, outdoor recreation enthusiasts and cities/towns with no damage to anyone ..... NW colorado area would be no different.

if the BLM participates in this then your department will be held accountable down the road when western cities begin to experience BLACK OUTS ……

do not block "right of way use" across the usa nor infringe upon multiply use of the public county lands in anyway ………county commissioners are elected to make these decisions !

closing any area roads would disenfranchises the handicapped, children and elderly, who have paid taxes for decades specific to care of these lands, preventing each from viewing our lovely county……..

thank you for your consideration.

best, marilyn oden

742 munro ave

rifle, co 81650

I81a Comments noted.

Comment(s)

I82 **Sharon S. O'Toole**

Box 159
Savery, WY 82332
April 2, 2014

Tamara Gertsch
BLM Wyoming State Field Office
P.O. Box 21150
Cheyenne, WY 82003

Margaret Oler
201 S. Main St., Suite 2300
Salt Lake City, UT 84111

Dear Tamara and Margaret,

Thanks for meeting with us at your Open House in Baggs, Wyoming this evening. It was informative.

I82a I do have one concern. I did not realize until we looked at the maps that the transmission line which skirts our private property in Moffat County, Colorado comes within one-half mile of our ranch headquarters. We have a house there which is occupied six to seven month each year.

What is the standard for the distance of the power lines from occupied housing for this project? I am concerned for the health and safety of our employees who live there part of the year.

I'd appreciate it if you would look into this and get back to me with this information.

Thank you.

Sincerely,

Sharon S. O'Toole
Salisbury Livestock Co.
307-383-2418
sharonsotoole@gmail.com

cc: Wendy Reynolds

Response(s)

I82a Potential public health and safety effects are addressed in Section 3.2.23.

Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

Comment(s)

I83 **Jeff and Tori Pack**

---------- Forwarded message ----------
From: **Tori Pack** <torishawpack@yahoo.com>
Date: Fri, Mar 21, 2014 at 8:29 AM
Subject: Energy Gateway South Transmission Project
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>

Jeff Pack
Tori Pack
3/21/2014
20540 N. 9460 E.
Mt. Pleasant, UT 84647
801-602-5996

I am writing in hopes that the preferred route for the Gateway South will be chosen. I live where the alternative route is proposed. Though the power company states that power lines pose no health threat, I feel that there are major health concerns in having the lines close to my home, causing harm to myself, my husband, my child, and my pets and farm animals. I also feel that my home value would be severely lowered if there were power lines near my home. Thank you for considering my concerns. Tori Pack

I83a

I83b

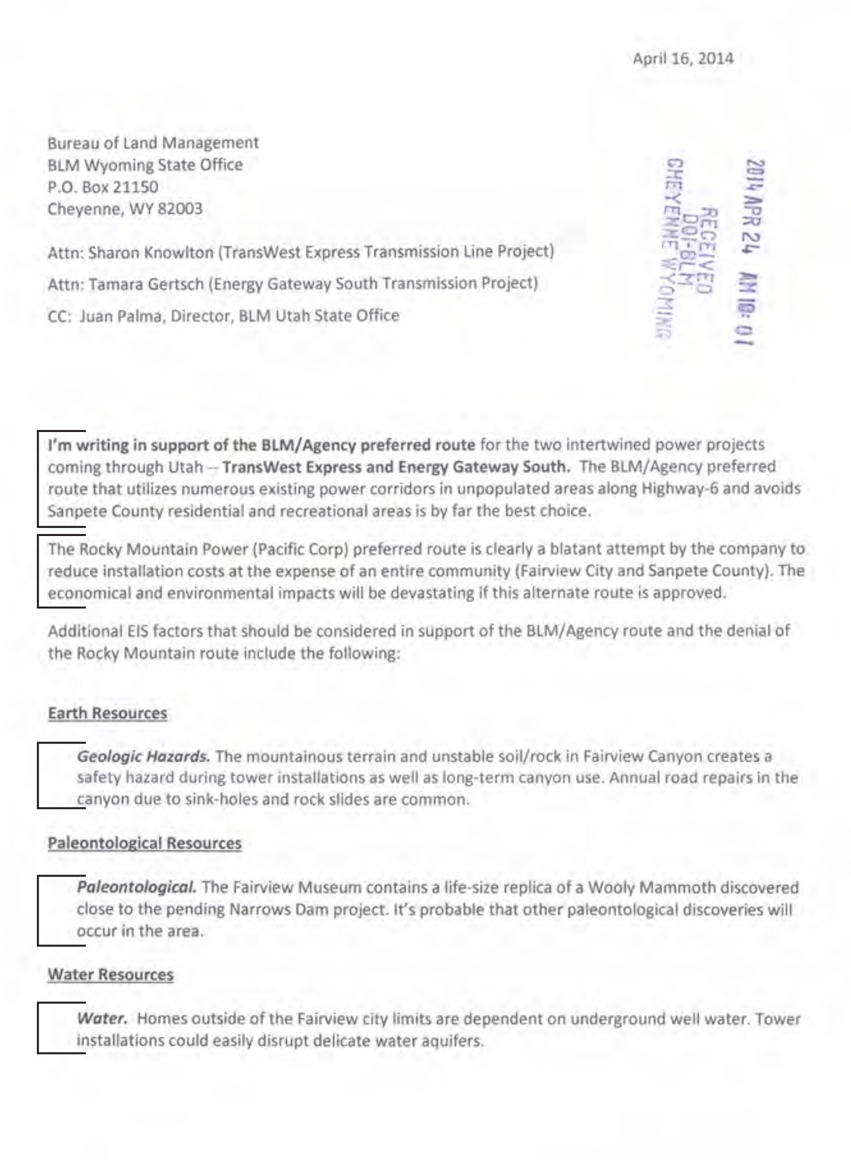
Response(s)

I83a The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

I83b As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Additional description has been added to Section 3.2.22, indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights or easements required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process. These impacts are described in Social and Economic Conditions, Section 3.2.22.

Comment(s)

I84 **Greg Parker**



April 16, 2014

Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

2014 APR 24 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Attn: Sharon Knowlton (TransWest Express Transmission Line Project)

Attn: Tamara Gertsch (Energy Gateway South Transmission Project)

CC: Juan Palma, Director, BLM Utah State Office

I84a **I'm writing in support of the BLM/Agency preferred route** for the two intertwined power projects coming through Utah – **TransWest Express and Energy Gateway South.** The BLM/Agency preferred route that utilizes numerous existing power corridors in unpopulated areas along Highway-6 and avoids Sanpete County residential and recreational areas is by far the best choice.

I84b The Rocky Mountain Power (Pacific Corp) preferred route is clearly a blatant attempt by the company to reduce installation costs at the expense of an entire community (Fairview City and Sanpete County). The economical and environmental impacts will be devastating if this alternate route is approved.

Additional EIS factors that should be considered in support of the BLM/Agency route and the denial of the Rocky Mountain route include the following:

Earth Resources

I84c ***Geologic Hazards.*** The mountainous terrain and unstable soil/rock in Fairview Canyon creates a safety hazard during tower installations as well as long-term canyon use. Annual road repairs in the canyon due to sink-holes and rock slides are common.

Paleontological Resources

I84d ***Paleontological.*** The Fairview Museum contains a life-size replica of a Wooly Mammoth discovered close to the pending Narrows Dam project. It's probable that other paleontological discoveries will occur in the area.

Water Resources

I84e ***Water.*** Homes outside of the Fairview city limits are dependent on underground well water. Tower installations could easily disrupt delicate water aquifers.

Response(s)

I84a Comment and route preference noted.

I84b Comment and route preference noted.

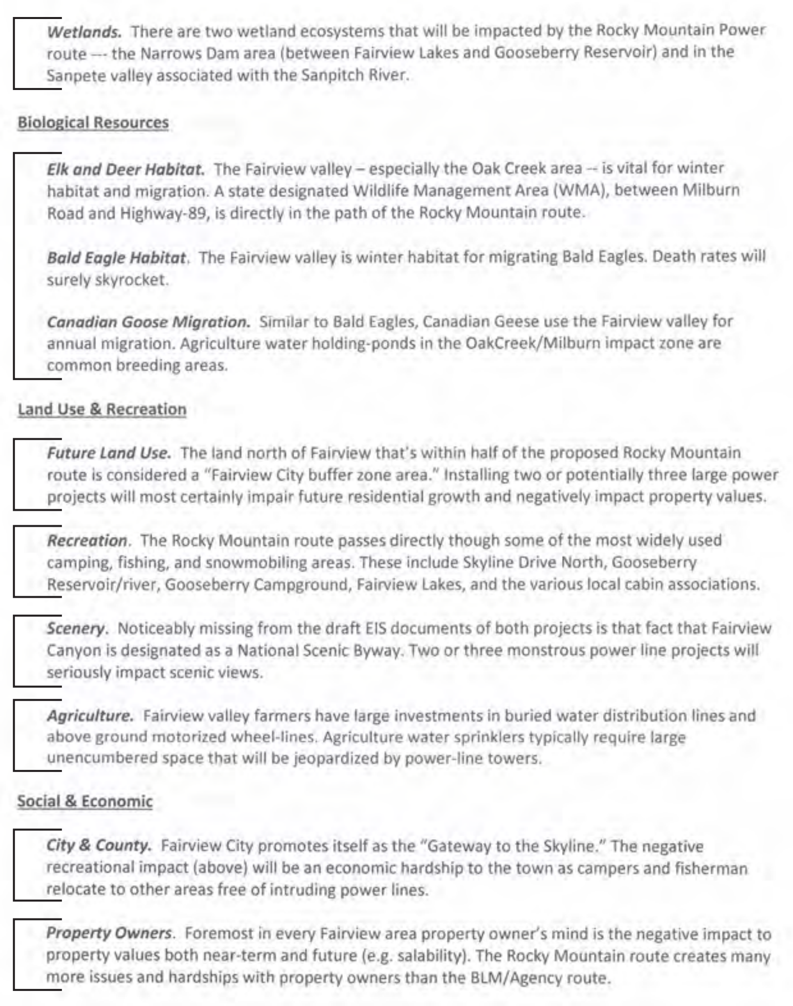
I84c It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

I84d All available data regarding previously recorded fossil localities was included in the analysis presented in Section 3.2.5.

I84e Comment noted. Impacts on water resources, including wells, are disclosed and analyzed in Section 3.2.4. Design features such as Design Feature 30, which prohibits the refueling or storage of hazardous materials in proximity to waterbodies and wells, would be in place to protect aquifers.

Comment(s)

I84 **Greg Parker (cont.)**



I84f **Wetlands.** There are two wetland ecosystems that will be impacted by the Rocky Mountain Power route — the Narrows Dam area (between Fairview Lakes and Gooseberry Reservoir) and in the Sanpete valley associated with the Sanpitch River.

Biological Resources

I84g **Elk and Deer Habitat.** The Fairview valley – especially the Oak Creek area – is vital for winter habitat and migration. A state designated Wildlife Management Area (WMA), between Milburn Road and Highway-89, is directly in the path of the Rocky Mountain route.

Bald Eagle Habitat. The Fairview valley is winter habitat for migrating Bald Eagles. Death rates will surely skyrocket.

Canadian Goose Migration. Similar to Bald Eagles, Canadian Geese use the Fairview valley for annual migration. Agriculture water holding-ponds in the OakCreek/Milburn impact zone are common breeding areas.

Land Use & Recreation

I84h **Future Land Use.** The land north of Fairview that's within half of the proposed Rocky Mountain route is considered a "Fairview City buffer zone area." Installing two or potentially three large power projects will most certainly impair future residential growth and negatively impact property values.

I84i **Recreation.** The Rocky Mountain route passes directly though some of the most widely used camping, fishing, and snowmobiling areas. These include Skyline Drive North, Gooseberry Reservoir/river, Gooseberry Campground, Fairview Lakes, and the various local cabin associations.

I84j **Scenery.** Noticeably missing from the draft EIS documents of both projects is that fact that Fairview Canyon is designated as a National Scenic Byway. Two or three monstrous power line projects will seriously impact scenic views.

I84k **Agriculture.** Fairview valley farmers have large investments in buried water distribution lines and above ground motorized wheel-lines. Agriculture water sprinklers typically require large unencumbered space that will be jeopardized by power-line towers.

Social & Economic

I84l **City & County.** Fairview City promotes itself as the "Gateway to the Skyline." The negative recreational impact (above) will be an economic hardship to the town as campers and fisherman relocate to other areas free of intruding power lines.

I84m **Property Owners.** Foremost in every Fairview area property owner's mind is the negative impact to property values both near-term and future (e.g. salability). The Rocky Mountain route creates many more issues and hardships with property owners than the BLM/Agency route.

Response(s)

I84f Comment noted. Wetlands included in analysis were inventoried using the most current National Wetlands Inventory data combined with National Gap Analysis Program landcover mapping. Refer to Section 3.2.4.

I84g Impacts on big game habitat, bald eagles and other raptors, and migratory birds in the Fairview Valley area are addressed in Sections 3.2.7.5.4 and 3.2.9.

The BLM continues to work closely with FWS and the Applicant to develop avoidance and minimization measures to reduce effects on avian species based on industry best practices. Design features of the Proposed Action and site-specific selective mitigation measures to reduce effects of the Project on avian species are listed in Section 3.2.9, Mitigation Planning and Effectiveness. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys).

Impacts on big game habitat would be reduced through the application of relevant design features and selective mitigation measures listed in Table 3-80.

I84h Based on data received and digitized from Fairview City, Utah, no Fairview City buffer zone area was identified. BLM recognizes the corridor does cross lands zoned as sensitive land outside of Fairview City boundaries in Sanpete County as depicted on Fairview City's zoning map. All potential impacts related to the zoning and general plan management direction in Sanpete County are analyzed in Section 3.2.11; potential impacts on future development are analyzed in Section 3.2.11; and potential impacts on property values are analyzed in Section 3.2.22.

I84i Scenic byways and other recreational areas and activities that may be affected by alternative routes considered for the Project are documented in Section 3.2.12. Scenic byways and other recreational areas and activities that may be affected by route variations are documented in Appendix F.

I84j See next page for response to I84m.

I84k See next page for response to I84m.

I84l See next page for response to I84m.

I84m See next page for response to I84m.

Comment(s)

Response(s) - continued

I84 **Greg Parker (cont.)**

I84j The entire Energy Loop Scenic Byway, of which Fairview Canyon is a portion, was assessed as part of the impacts on views (travel routes). In particular, impacts resulting from the Project on views along the scenic byway were assessed to be high due to the natural setting present across the Wasatch Plateau. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

I84k To reduce potential impacts on agricultural irrigation systems, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

I84l Construction workers could displace tourism temporarily in small towns with limited housing and lodging resources. These issues may be mitigated through working with counties and communities on these issues. These issues are best addressed during the county and/or state permitting phase of the project (e.g., the Wyoming Industrial Siting Permits). Additionally, the Applicant employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

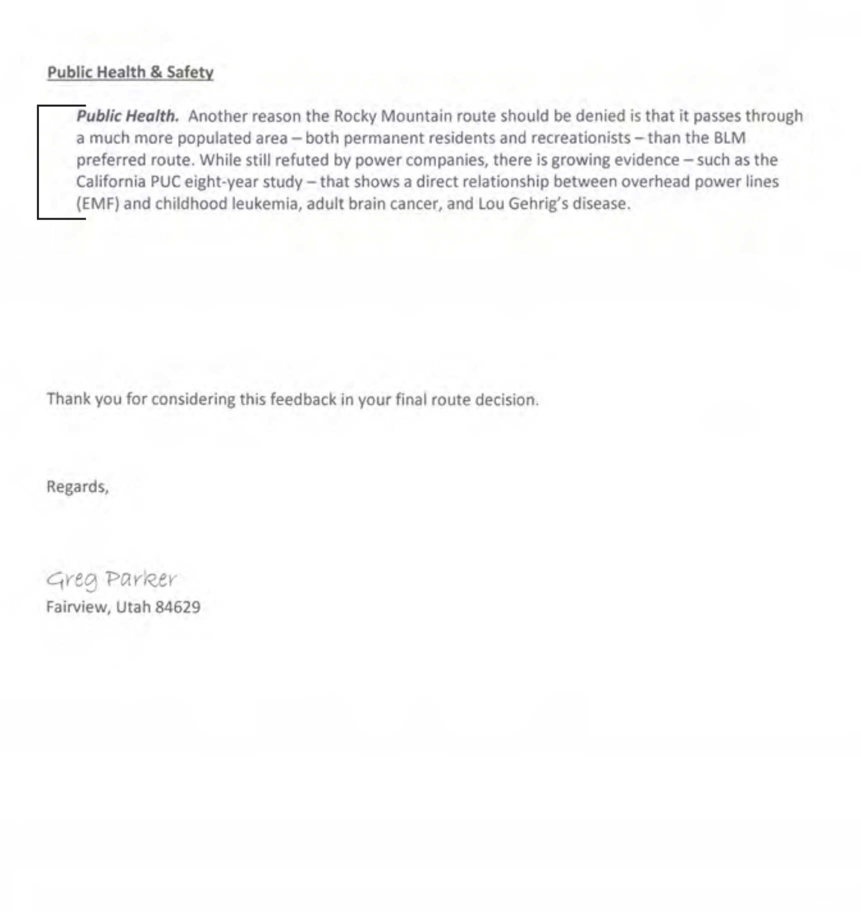
In locations where the Project would dominate a natural setting, high impacts on those views are described in Section 3.2.18 and mapped on MV-21b in Volume II of the Final EIS. Impacts on the natural character of Fairview Canyon are also discussed in Section 3.2.18 and mapped on MV-23b. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative. It is likely the presence of the transmission line would affect where people participate in recreational activities in specific locations; however, it is unclear whether their presence would deter hunters and fishermen from visiting the general location, such as Fairview Canyon.

I84m As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. There are 10 residences north of Fairview, Utah, located within 0.25 mile of Alternatives COUT-H and COUT BAX-E, which are likely to be affected by the proximity of the transmission line.

Response continued on next page.

Comment(s)

I84 **Greg Parker (cont.)**



Public Health & Safety

I84n

Public Health. Another reason the Rocky Mountain route should be denied is that it passes through a much more populated area – both permanent residents and recreationists – than the BLM preferred route. While still refuted by power companies, there is growing evidence – such as the California PUC eight-year study – that shows a direct relationship between overhead power lines (EMF) and childhood leukemia, adult brain cancer, and Lou Gehrig's disease.

Thank you for considering this feedback in your final route decision.

Regards,

Greg Parker

Fairview, Utah 84629

Response(s)

I84m cont.

Additional description has been added to Section 3.2.22, indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process.

Furthermore, all residences were included in the analysis of high concern views. In locations where the Project would dominate a natural setting, high impacts on those views are described in Section 3.2.18 and mapped on MV-21b in Volume II of the Final EIS. Impacts on the natural character of Fairview Canyon are also discussed in Section 3.2.18 and mapped on MV-23b. Based upon these impacts, and other resource effects, this alternative was not chosen as the agency preferred route.

I84n

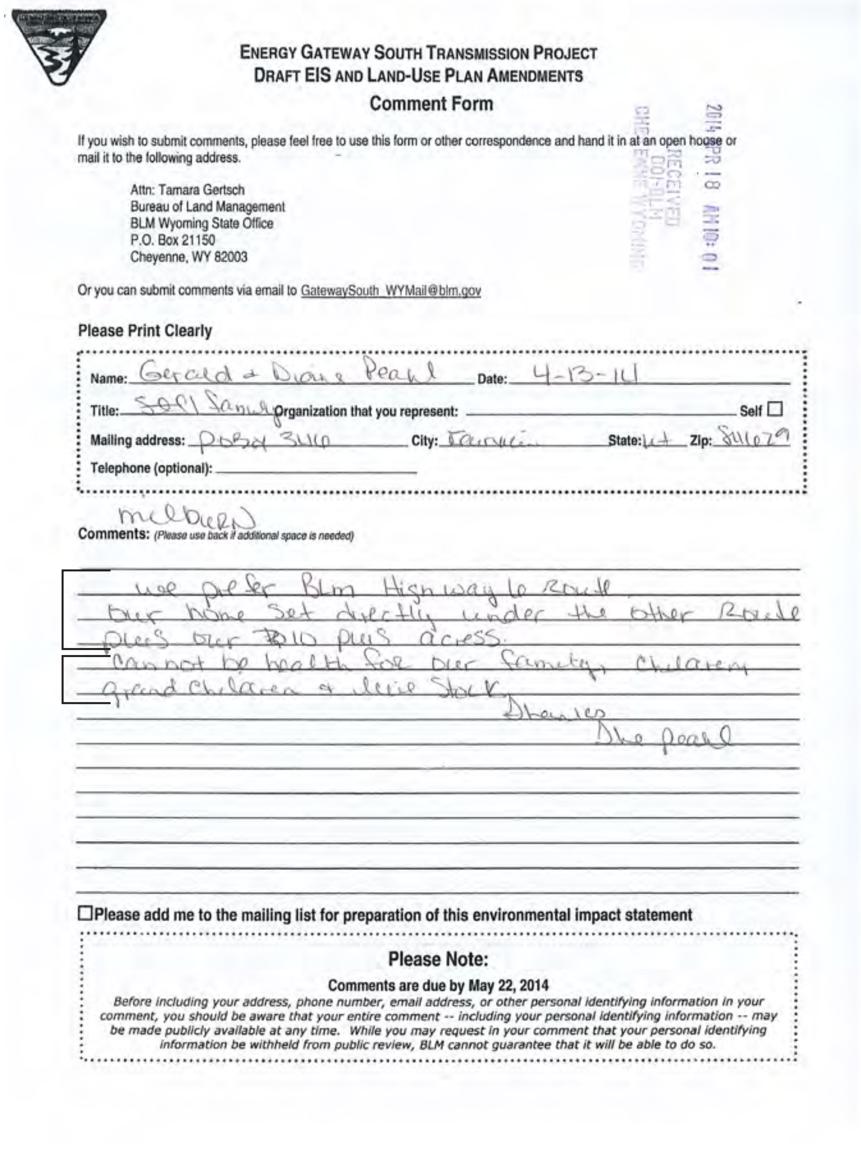
The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

The California Public Utilities Commission (CPUC) created the California EMF Program in 1993, which was administered by the California Department of Health Services (CDHS). The program issued its final report in 2002. The report was authored by three staff scientists at CDHS and the conclusions expressed in the report were not consensus opinions, but individual opinions of the three scientists. The Scientific Advisory Panel (SAP) that oversaw the program opined that the SAP "might come to somewhat different conclusions and arrive at lower estimates of risk from EMFs" compared to the CDHS report. The conclusions of the CDHS report were also in contrast to conclusions expressed in other, consensus-based opinions of numerous national and international multidisciplinary expert panels, convened before and after the CDHS report. These expert panel opinions and reports include those of the U.S. National Institute of Environmental Health Sciences (1999), the International Agency for Research on Cancer (2002), the WHO (2002), the International Commission of Non-Ionizing Radiation Protection (2010), and the European Union's Scientific Committee on Emerging and Newly Identified Health Risks (2013). None of these consensus reports concluded there are any known adverse health effects due to exposure to EMF.

Following the completion of the California EMF project, the CPUC made no change to its EMF policy. In its 2006 decision, the CPUC reaffirmed its low-cost/no-cost policy to minimize EMF exposure from new utility transmission and substations projects.

Comment(s)

I85 **Gerald and Diane Pearl**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

2014 APR 18 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Gerald & Diane Pearl Date: 4-13-14
Title: Self Famly Organization that you represent: ______ Self ☐
Mailing address: PO Box 346 City: Fairview State: ut Zip: 84629
Telephone (optional): ______

melburn
Comments: *(Please use back if additional space is needed)*

I85a
we prefer Blm Highway to Route.
our home set directly under the other Route
plus our 3010 plus acress.

I85b
cannot be health for our famely, Children
grand Childaren & live Stock.
Thanks
The pearl

☐**Please add me to the mailing list for preparation of this environmental impact statement**

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

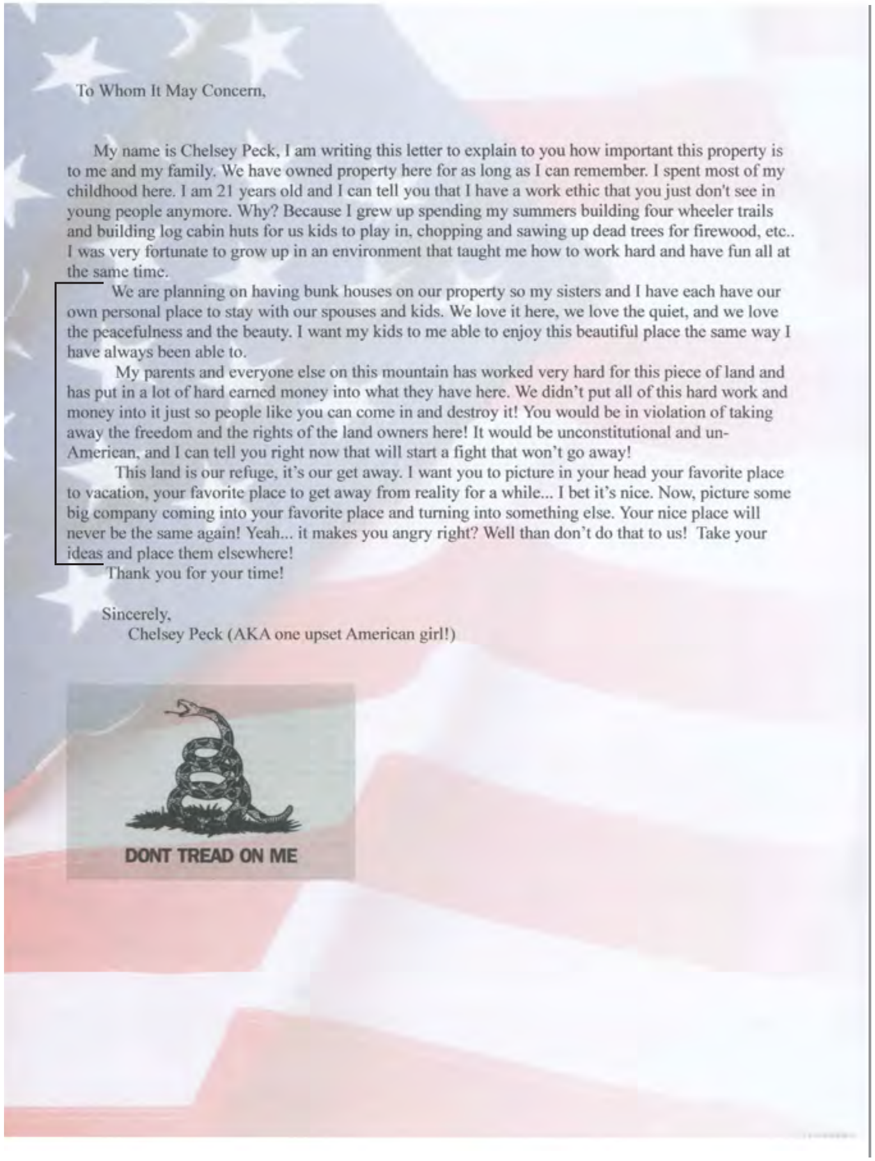
Response(s)

I85a
Comment and route preference noted. Should this alternative route be selected, design features of the Proposed Action for environmental protection and selective mitigation have been identified that would reduce potential impacts. Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

I85b
The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

Comment(s)

I86 **Chelsey Peck**



To Whom It May Concern,

My name is Chelsey Peck, I am writing this letter to explain to you how important this property is to me and my family. We have owned property here for as long as I can remember. I spent most of my childhood here. I am 21 years old and I can tell you that I have a work ethic that you just don't see in young people anymore. Why? Because I grew up spending my summers building four wheeler trails and building log cabin huts for us kids to play in, chopping and sawing up dead trees for firewood, etc.. I was very fortunate to grow up in an environment that taught me how to work hard and have fun all at the same time.

I86a We are planning on having bunk houses on our property so my sisters and I have each have our own personal place to stay with our spouses and kids. We love it here, we love the quiet, and we love the peacefulness and the beauty. I want my kids to me able to enjoy this beautiful place the same way I have always been able to.

My parents and everyone else on this mountain has worked very hard for this piece of land and has put in a lot of hard earned money into what they have here. We didn't put all of this hard work and money into it just so people like you can come in and destroy it! You would be in violation of taking away the freedom and the rights of the land owners here! It would be unconstitutional and un-American, and I can tell you right now that will start a fight that won't go away!

This land is our refuge, it's our get away. I want you to picture in your head your favorite place to vacation, your favorite place to get away from reality for a while... I bet it's nice. Now, picture some big company coming into your favorite place and turning into something else. Your nice place will never be the same again! Yeah... it makes you angry right? Well than don't do that to us! Take your ideas and place them elsewhere!

Thank you for your time!

Sincerely,
Chelsey Peck (AKA one upset American girl!)

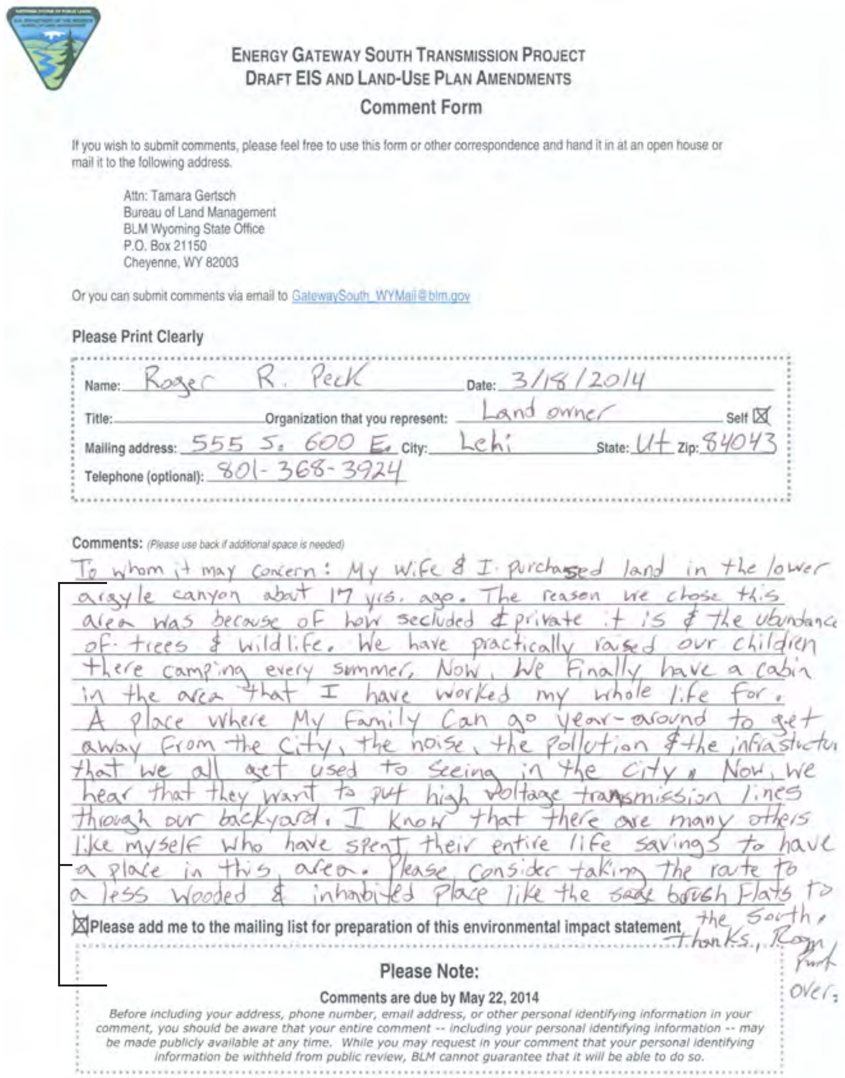
Response(s)

I86a Comment and route preference noted.

Comment(s)

Response(s)

I87 **Roger Peck**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Roger R. Peck
Date: 3/18/2014
Title:
Organization that you represent: Land owner
Self ☒
Mailing address: 555 S. 600 E.
City: Lehi
State: Ut
Zip: 84043
Telephone (optional): 801-368-3924

Comments: *(Please use back if additional space is needed)*

To whom it may concern: My wife & I purchased land in the lower

I87a argyle canyon about 17 yrs. ago. The reason we chose this area was because of how secluded & private it is & the ubundance of trees & wildlife. We have practically raised our children there camping every summer, Now, We finally have a cabin in the area that I have worked my whole life for. A place where My Family Can go year-around to get away from the city, the noise, the pollution & the infrastuctur that we all get used to seeing in the city. Now, we hear that they want to put high voltage transmission lines through our backyard. I know that there are many others like myself who have spent their entire life savings to have

I87b a place in this area. Please consider taking the route to a less wooded & inhabited place like the sage brush Flats to the South.
Thanks, Roger Peck
over.

☒ Please add me to the mailing list for preparation of this environmental impact statement.

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I87a Comment and route preference noted. Based on comments received on the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

I87b Comment and route preference noted.

Comment(s)

I87 **Roger Peck (cont.)**

1- *- Aslo, we have abundant wildlife including deer, elk, Fox, snowshoe hare rabbits & Sage grouse. We go up here year around & see wildlife even through to winter.

I87c

2- *- Also, this area is a watershed area for Carbon County. We pay dues for water rights through to Carbon Canal Company. If a swath of vegatation is cut down in this area there will be large scale devastation caused by debris fields that will flow during the heavy summer rains that this area receives.

Response(s)

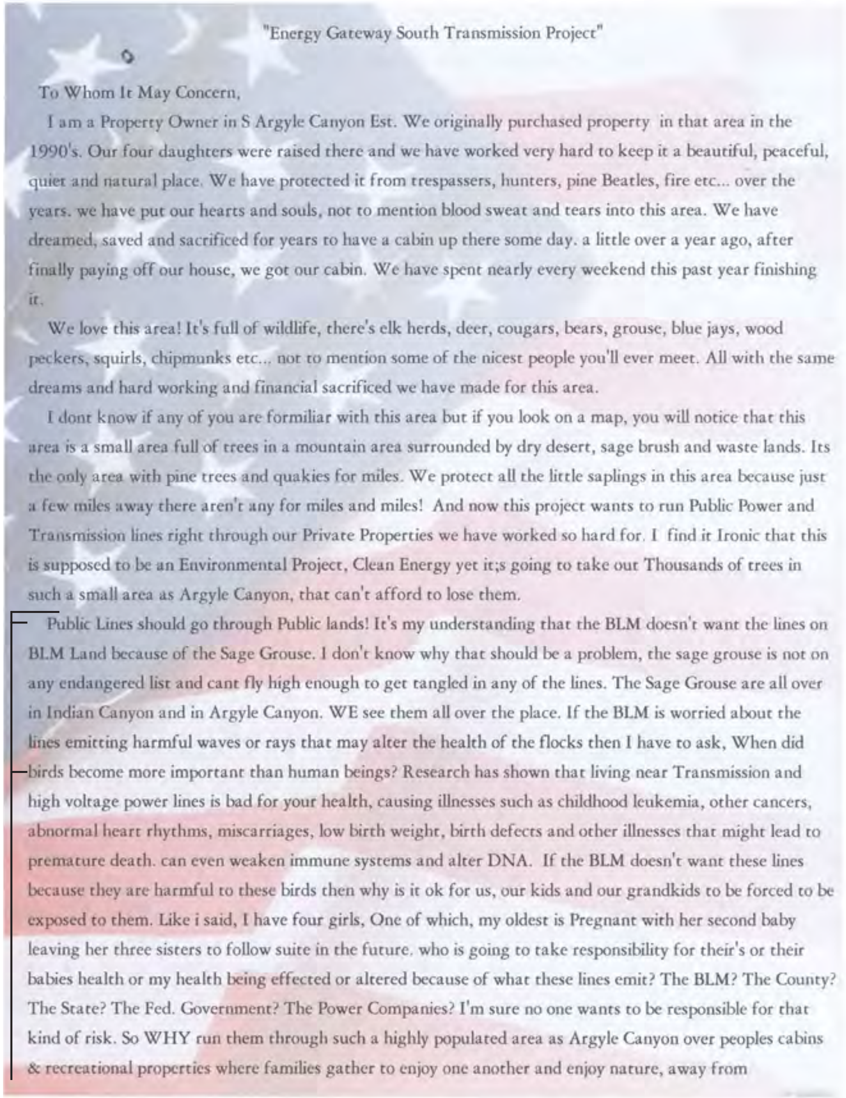
I87c

Comment noted. Erosion potential is not expected to increase solely due to vegetation clearing; however, erosion could increase as a result of soil disturbance. Several Project design features of the Proposed Action are intended to minimize the potential for increased erosion. Notably, Design Feature 2 requires the recontouring and revegetation of disturbed areas to reduce erosion potential.

Comment(s)

Response(s)

I88 **Roger and Melissa Peck**



"Energy Gateway South Transmission Project"

To Whom It May Concern,

I am a Property Owner in S Argyle Canyon Est. We originally purchased property in that area in the 1990's. Our four daughters were raised there and we have worked very hard to keep it a beautiful, peaceful, quiet and natural place. We have protected it from trespassers, hunters, pine Beatles, fire etc... over the years. we have put our hearts and souls, not to mention blood sweat and tears into this area. We have dreamed, saved and sacrificed for years to have a cabin up there some day. a little over a year ago, after finally paying off our house, we got our cabin. We have spent nearly every weekend this past year finishing it.

We love this area! It's full of wildlife, there's elk herds, deer, cougars, bears, grouse, blue jays, wood peckers, squirls, chipmunks etc... not to mention some of the nicest people you'll ever meet. All with the same dreams and hard working and financial sacrificed we have made for this area.

I dont know if any of you are formiliar with this area but if you look on a map, you will notice that this area is a small area full of trees in a mountain area surrounded by dry desert, sage brush and waste lands. Its the only area with pine trees and quakies for miles. We protect all the little saplings in this area because just a few miles away there aren't any for miles and miles! And now this project wants to run Public Power and Transmission lines right through our Private Properties we have worked so hard for. I find it Ironic that this is supposed to be an Environmental Project, Clean Energy yet it;s going to take out Thousands of trees in such a small area as Argyle Canyon, that can't afford to lose them.

I88a Public Lines should go through Public lands! It's my understanding that the BLM doesn't want the lines on
BLM Land because of the Sage Grouse. I don't know why that should be a problem, the sage grouse is not on
I88b any endangered list and cant fly high enough to get tangled in any of the lines. The Sage Grouse are all over
in Indian Canyon and in Argyle Canyon. WE see them all over the place. If the BLM is worried about the
lines emitting harmful waves or rays that may alter the health of the flocks then I have to ask, When did
birds become more important than human beings? Research has shown that living near Transmission and
high voltage power lines is bad for your health, causing illnesses such as childhood leukemia, other cancers,
abnormal heart rhythms, miscarriages, low birth weight, birth defects and other illnesses that might lead to
premature death. can even weaken immune systems and alter DNA. If the BLM doesn't want these lines
because they are harmful to these birds then why is it ok for us, our kids and our grandkids to be forced to be
I88c exposed to them. Like i said, I have four girls, One of which, my oldest is Pregnant with her second baby
leaving her three sisters to follow suite in the future. who is going to take responsibility for their's or their
babies health or my health being effected or altered because of what these lines emit? The BLM? The County?
The State? The Fed. Government? The Power Companies? I'm sure no one wants to be responsible for that
kind of risk. So WHY run them through such a highly populated area as Argyle Canyon over peoples cabins
& recreational properties where families gather to enjoy one another and enjoy nature, away from

I88a Comment and route preference noted.

I88b Greater sage-grouse are a Candidate species for listing under the Endangered Species Act. The impact analysis was conducted using the best scientific information about transmission lines' potential effects on the species. The potential for sage-grouse to occur in Argyle and Indian Canyons was evaluated and is discussed in Section 3.2.8.5.4.

I88c The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

Comprehensive reviews of EMF research, such as the one conducted by the WHO, have found there is insufficient evidence to conclude that exposure to EMF leads to long-term health effects, such as adult cancer, neurodegenerative diseases (such as Alzheimer's or Lou Gehrig's disease), or adverse effects on reproduction, pregnancy, or growth and development of an embryo. While limited evidence is available on a potential link with childhood leukemia, the evidence is not conclusive enough to consider it a causal relationship or to form the basis of scientifically based exposure guidelines.

Overall, based on currently available evidence, the WHO concludes that "[d]espite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health." Similarly, the ICNIRP, the leading agency to set scientifically based exposure limits for electric and magnetic fields (EMF) to protect public health, states that the evidence from studies of long-term health outcomes "is too weak to form the basis for exposure guidelines."

Comment(s)

Response(s)

I88 | **Roger and Melissa Peck (cont.)**

I88c noise, pollution and Powerlines. There are other Routes to choose from such as along highway 40 or to the East of Argyle canyon.

I hope that you will put yourselves in our situation before you make your final decision on this project . Would you want this project going through your private property your trying to preserve for your posterity? WE DO NOT!!!

Roger & Melissa Peck

Comment(s)

Response(s)

I89 **Gordon L. Pedrow**

From: <gpedrow@aol.com>
Date: Tue, May 20, 2014 at 4:37 AM
Subject: Comments for Energy Gateway South Transmission Line
To: GatewaySouth_WYMail@blm.gov
Cc: dedmunds@audubon.org, alex_daue@tws.org

Please find comments for the draft EIS for the subject project.

Thank you,

Gordon L. Pedrow
2639 Falcon Dr
Longmont, CO 80503

Energy Gateway South Transmission Line Project

After spending parts of March and April of this year in northwest Colorado, I have a new appreciation for the uniqueness of the area covered by this draft EIS. The area is remote. It provides habitat for many birds and mammals. In some places, it is wild. When better options exist, it should be left as is.

I89a

Given my recent observations in the area, I strongly disagree with the proposed route through large portions of Colorado. The least environmentally damaging route in the DEIS is WYCO-D1. By following Co Hwy 13 and US Hwy 40, as well as, existing transmission corridors, WYCO-D1 will have a much smaller environmental foot print than the proposed route. Use of existing roadways in WYCO-D1 will provide considerable access for construction and maintenance of the transmission line and eliminate the need to newly disturb many acres of additional land.

WYCO-D1 avoids impacts to BLM lands with wilderness characteristics, as well as, to critical Greater sage-grouse habitat. The proposed route will significantly negatively impact these valuable public lands and habitat.

I encourage your reassessment of the proposed route and strong consideration of WYCO-D1.

Gordon L. Pedrow

2639 Falcon Dr

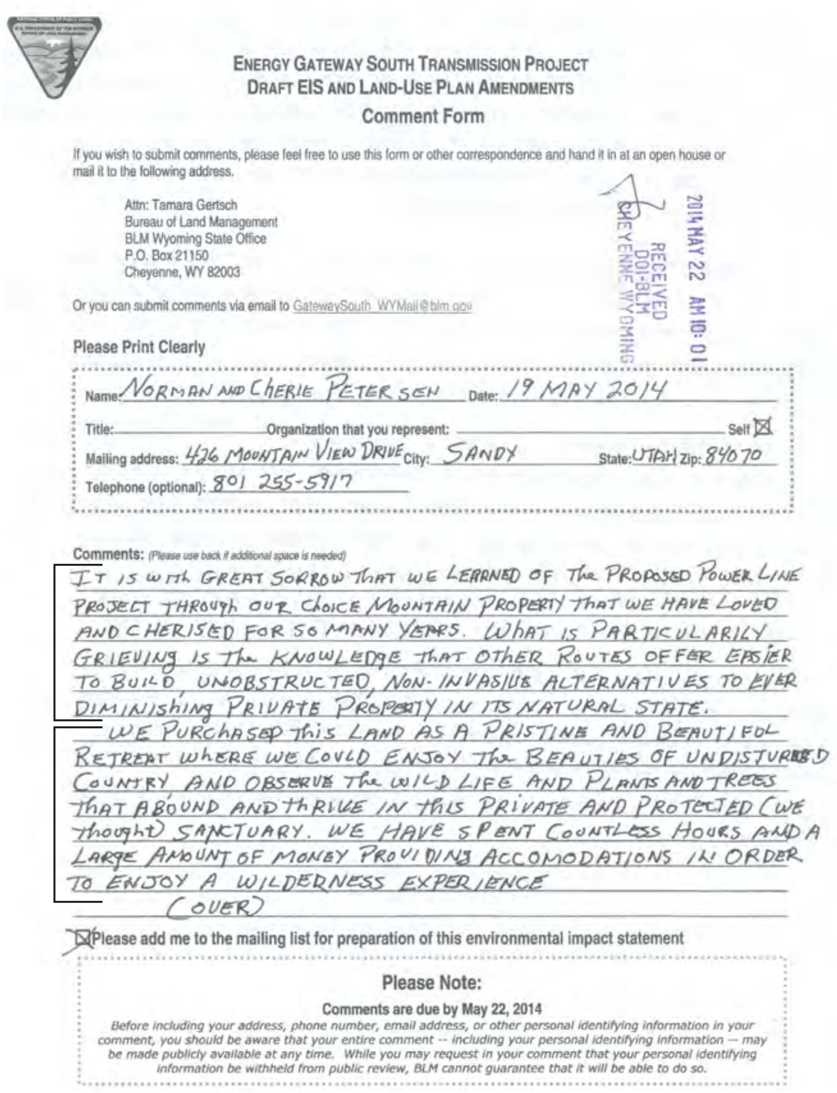
Longmont, Co 80503

I89a Comment and route preference noted.

Comment(s)

Response(s)

I90 **Norman and Cherie Petersen**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 MAY 22 AM 10: 01

Please Print Clearly

Name: NORMAN AND CHERIE PETERSEN Date: 19 MAY 2014

Title: ______ Organization that you represent: ______ Self ☒

Mailing address: 426 MOUNTAIN VIEW DRIVE City: SANDY State: UTAH Zip: 84070

Telephone (optional): 801 255-5917

Comments: *(Please use back if additional space is needed)*

I90a IT IS WITH GREAT SORROW THAT WE LEARNED OF THE PROPOSED POWER LINE PROJECT THROUGH OUR CHOICE MOUNTAIN PROPERTY THAT WE HAVE LOVED AND CHERISED FOR SO MANY YEARS. WHAT IS PARTICULARILY GRIEVING IS THE KNOWLEDGE THAT OTHER ROUTES OFFER EASIER TO BUILD, UNOBSTRUCTED, NON-INVASIVE ALTERNATIVES TO EVER DIMINISHING PRIVATE PROPERTY IN ITS NATURAL STATE.

I90b WE PURCHASED THIS LAND AS A PRISTINE AND BEAUTIFUL RETREAT WHERE WE COULD ENJOY THE BEAUTIES OF UNDISTURBED COUNTRY AND OBSERVE THE WILD LIFE AND PLANTS AND TREES THAT ABOUND AND THRIVE IN THIS PRIVATE AND PROTECTED (WE thought) SANCTUARY. WE HAVE SPENT COUNTLESS HOURS AND A LARGE AMOUNT OF MONEY PROVIDING ACCOMODATIONS IN ORDER TO ENJOY A WILDERNESS EXPERIENCE

(OVER)

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

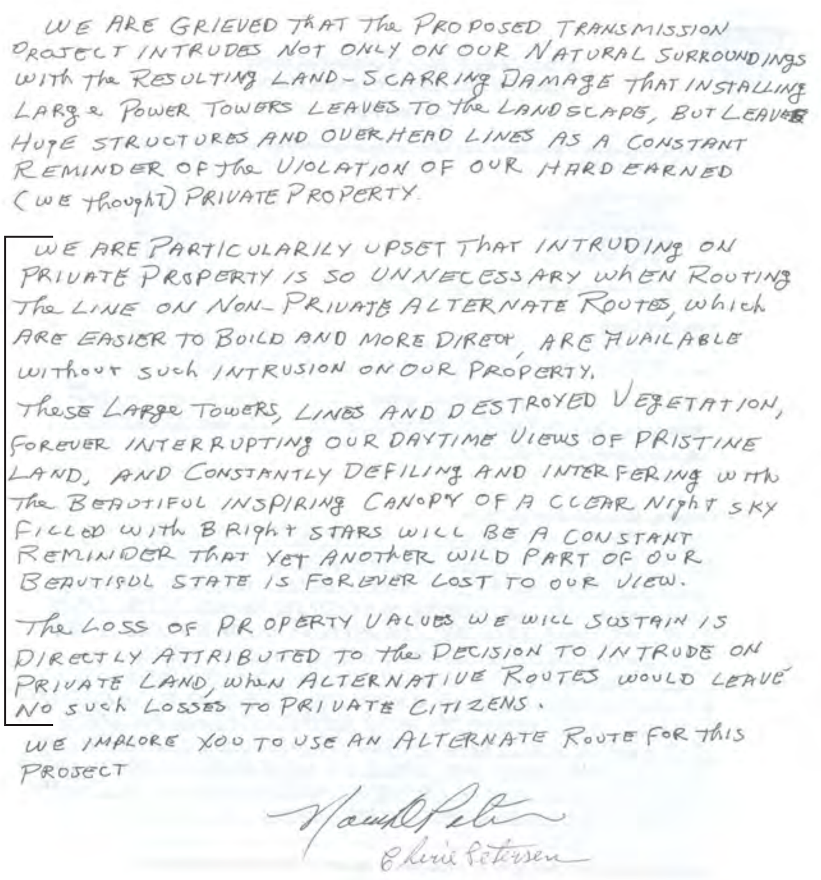
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I90a Comment and route preference noted.

I90b Comment noted.

Comment(s)

I90 **Norman and Cherie Petersen (cont.)**



WE ARE GRIEVED THAT The PROPOSED TRANSMISSION PROJECT INTRUDES NOT ONLY ON OUR NATURAL SURROUNDINGS with the RESULTING LAND-SCARRING DAMAGE THAT INSTALLING LARGE POWER TOWERS LEAVES TO the LANDSCAPE, BUT LEAVES HUGE STRUCTURES AND OVERHEAD LINES AS A CONSTANT REMINDER OF the VIOLATION OF OUR HARD EARNED (WE thought) PRIVATE PROPERTY.

I90c

WE ARE PARTICULARILY UPSET THAT INTRUDING ON PRIVATE PROPERTY IS SO UNNECESSARY when ROUTING The LINE ON NON-PRIVATE ALTERNATE ROUTES, which ARE EASIER TO BUILD AND MORE DIRECT, ARE AVAILABLE without such INTRUSION ON OUR PROPERTY. These LARGE TOWERS, LINES AND DESTROYED VEGETATION, FOREVER INTERRUPTING OUR DAYTIME VIEWS OF PRISTINE LAND, AND CONSTANTLY DEFILING AND INTERFERING with the BEAUTIFUL INSPIRING CANOPY OF A CLEAR Night SKY FILLED with Bright STARS WILL BE A CONSTANT REMINDER THAT YET ANOTHER WILD PART OF OUR BEAUTIFUL STATE IS FOREVER LOST TO OUR VIEW.

The LOSS OF PROPERTY VALUES WE WILL SUSTAIN IS DIRECTLY ATTRIBUTED TO the DECISION TO INTRUDE ON PRIVATE LAND, when ALTERNATIVE ROUTES WOULD LEAVE NO such LOSSES TO PRIVATE CITIZENS.

WE IMPLORE YOU TO USE AN ALTERNATE ROUTE FOR this PROJECT

Cherie Petersen

Response(s)

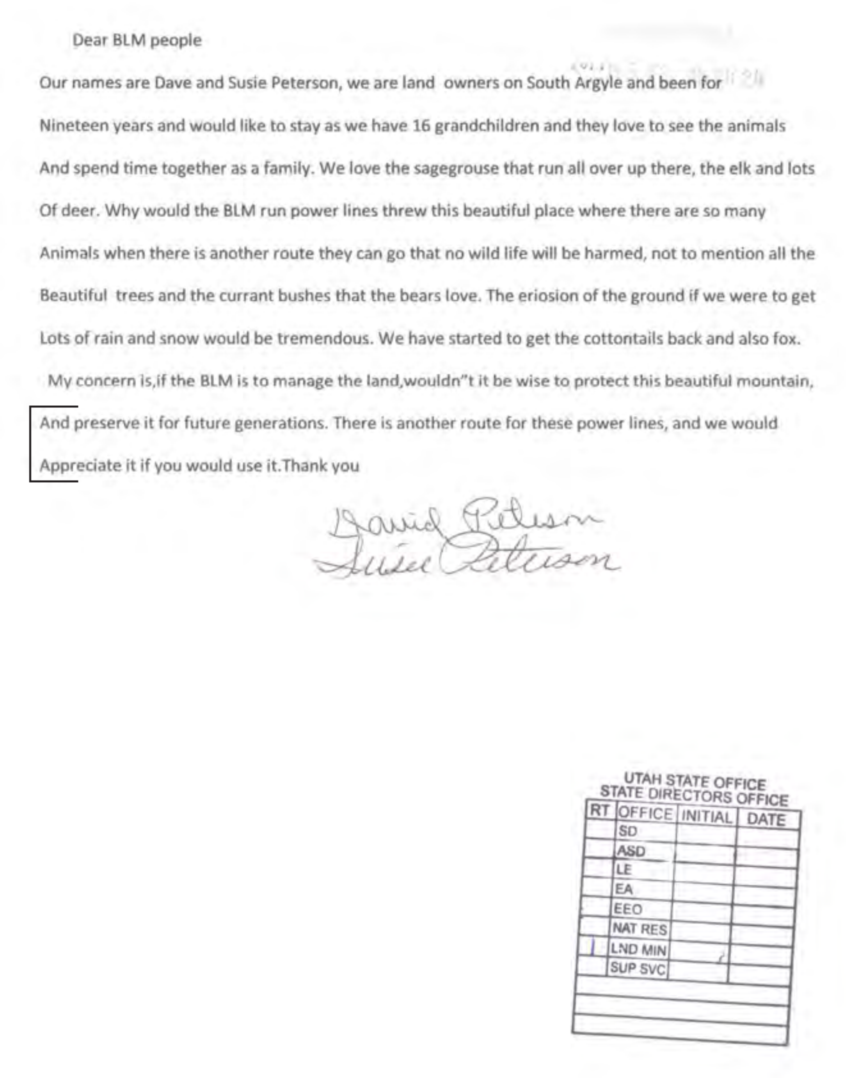
I90c

Impacts on views from residences, recreation sites, and travel routes as well as modifications to scenery were all assessed in the EIS to disclose effects on visual resources. Additionally, all practicable mitigation would be applied to reduce these effects to the extent possible. Due to the amount of privately owned land in the Project area, the siting of alternative routes balanced the need to cross some private lands in consideration of impacts on other resources.

As described in the Impacts to Property Values section of Section 3.2.22, property values can certainly be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Various distances from residences to the transmission line are analyzed in the Final EIS to evaluate possible impacts to property values.

Comment(s)

I91 **David and Susie Peterson**



Dear BLM people

Our names are Dave and Susie Peterson, we are land owners on South Argyle and been for Nineteen years and would like to stay as we have 16 grandchildren and they love to see the animals And spend time together as a family. We love the sagegrouse that run all over up there, the elk and lots Of deer. Why would the BLM run power lines threw this beautiful place where there are so many Animals when there is another route they can go that no wild life will be harmed, not to mention all the Beautiful trees and the currant bushes that the bears love. The eriosion of the ground if we were to get Lots of rain and snow would be tremendous. We have started to get the cottontails back and also fox.

My concern is,if the BLM is to manage the land,wouldn"t it be wise to protect this beautiful mountain,

I91a And preserve it for future generations. There is another route for these power lines, and we would Appreciate it if you would use it.Thank you

David Peterson
Susie Peterson

UTAH STATE OFFICE
STATE DIRECTORS OFFICE

RT	OFFICE	INITIAL	DATE
	SD		
	ASD		
	LE		
	EA		
	EEO		
	NAT RES		
	LND MIN		
	SUP SVC		

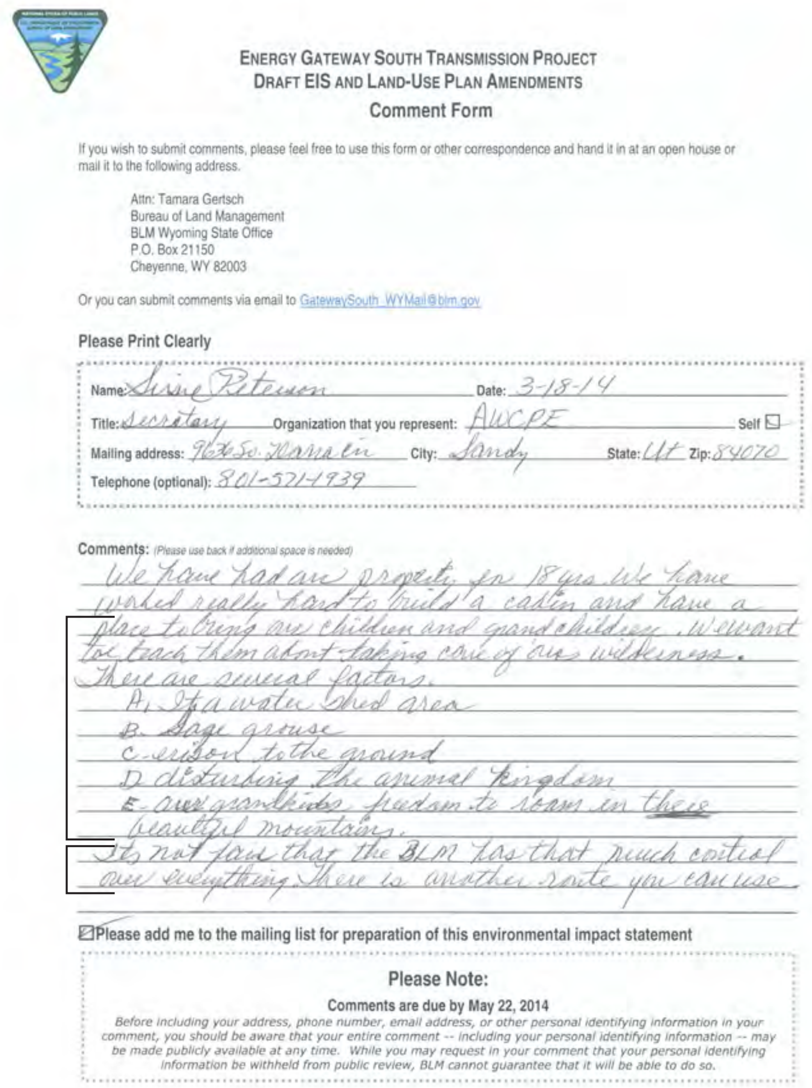
Response(s)

I91a Comment and route preference noted.

Comment(s)

Response(s)

I92 | **Susie Peterson**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Susie Peterson Date: 3-18-14
Title: secretary Organization that you represent: AWCPE Self ☐
Mailing address: 9636 So. Hansen City: Sandy State: Ut Zip: 84070
Telephone (optional): 801-571-1939

Comments: *(Please use back if additional space is needed)*

We have had are property for 18 yrs. We have worked really hard to build a cabin and have a

I92a place to bring are children and grandchildren. We want to teach them about taking care of are wilderness. There are several factors.
A. Its a water shed area
B. Sage grouse
C. erison to the ground
D disturbing the animal kingdom
E. are grandkids freedom to roam in these beautiful mountains.

I92a Its not fair that the BLM has that much control over everything. There is another route you can use

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I92a Comment noted. Potential effects on sage-grouse and other wildlife are addressed in Sections 3.2.8 and 3.2.7.

I92b Comment and route preference noted.

Comment(s)

Response(s)

I93 **Donna Pierce**

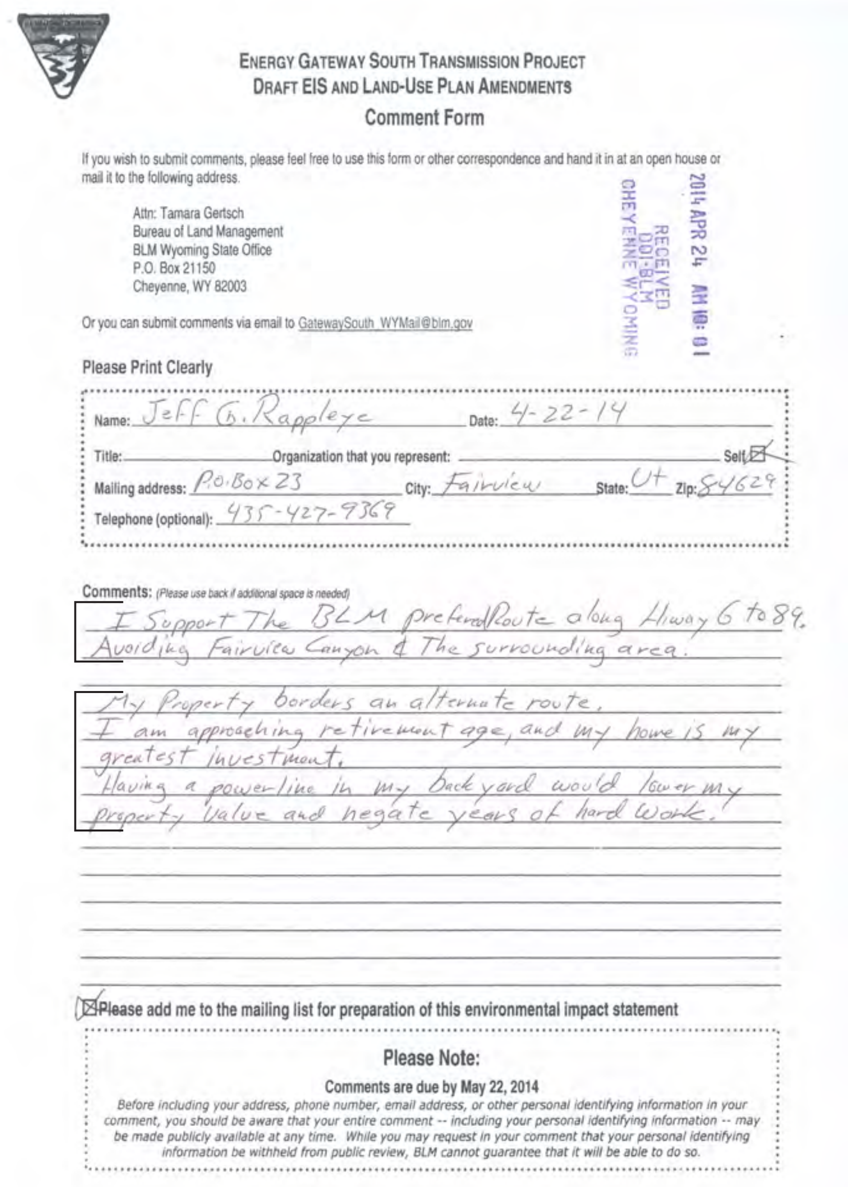
---------- Forwarded message ----------
From: **Donna Pierce** <firestormgirl@gmail.com>
Date: Thu, Mar 20, 2014 at 10:01 AM
Subject: Power lines
To: GatewaySouth_WYMail@blm.gov

I93a What are u nuts.... leave the beautiful property's alone. Find another way without disturbing beautiful property's with clutter...

I93a Comment and route preference noted.

Comment(s)

I94 | **Jeff G. Rappleye**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 APR 24 AM 10:01

Please Print Clearly

Name: Jeff G. Rappleye Date: 4-22-14
Title: Organization that you represent: Self ☒
Mailing address: P.O. Box 23 City: Fairview State: Ut Zip: 84629
Telephone (optional): 435-427-9369

Comments: *(Please use back if additional space is needed)*

I94a
I Support The BLM prefered Route along Hiway 6 to 89.
Avoiding Fairview Canyon & The surrounding area.

I94b
My Property borders an alternate route.
I am approaching retirement age, and my home is my greatest investment.
Having a powerline in my Back yard would lower my property value and negate years of hard Work.

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I94a Comment and route preference noted.

I94b As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. Additional description has been added to Section 3.2.22, indicating the Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights or easements required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. Therefore, private property owners would be compensated for any losses in property values based on market values assessed through the appraisal process.

Comment(s)

I95 **Jerrold N. Rasmussen**

From: **Jerrold Ras** <3rranch1969@gmail.com>
Date: Wed, May 7, 2014 at 2:49 PM
Subject: Gateway South Project
To: GatewaySouth_WYMail@blm.gov

To Tamara Gertsch,

I95a I was born and raised in Sanpete County. I am 81 years old and I chose to live my life here because of the natural beauty of this area. It sickens me to think of a Giant Power line destroying the eco system of this delicate habitat which won't be the same for the next generations. What will be the effects on the animals...wild turkeys, deer, elk, coyotes, ducks, Canadian Geese, Sand Hill Cranes...and others if the power lines with all the electro magnetic energy they create makes them sick? There really isn't anyplace else for them to live...that's why they are here.
The power companies claim that there are no health risks to animals or people....Hah! Just read the front page of the Salt Lake Tribune last Monday which tells about the law suit between IPP and the Dairy Farmers in Delta.The farmers claim a higher death rate and lower milk production in their animals. And what about health risks to humans? You only have to google electro magnetic poisoning to read about the unfavorable health risks....despite what the power companies say. Our economy is very limited in Sanpete.....we depend on hunting, tourism, farming, and agriculture mostly. I don't see why RMP insists on going through Sanpete when the BLM preferred route already has easments and will have fewer health and economic effects. That's why I am asking RMP to support the BLM study.

Thank you
Jerrold N. Rasmussen
Oak Creek, Utah

Response(s)

I95a Potential effects on the natural and human environment are discussed in Chapter 3 of the EIS.

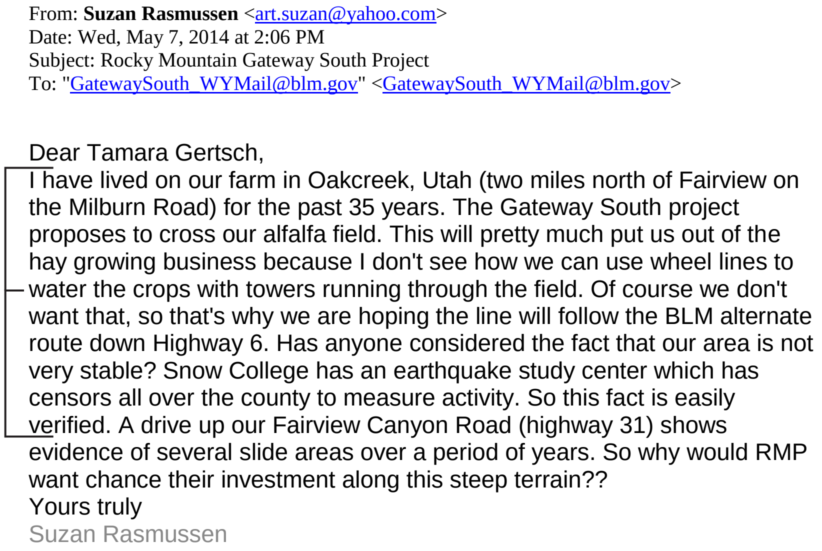
The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

The internet contains a large amount of unverifiable information and could not be automatically trusted without verification. Comprehensive expert scientific reviews of research studies on EMF and potential health effects, such as the review conducted by the WHO, did not conclude that there is any conclusive evidence to link adverse health effects to EMF. Based on currently available evidence, the WHO concludes that “[d]espite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health.” Similarly, the ICNIRP, the leading agency to set scientifically based exposure limits for electric and magnetic fields (EMF) to protect public health, states that the evidence from studies of long-term health outcomes “is too weak to form the basis for exposure guidelines.”

Similarly, the overall scientific evidence does not confirm any adverse effects on animal behavior, productivity and health.

Comment(s)

I96 **Suzan Rasmussen**



From: **Suzan Rasmussen** <art.suzan@yahoo.com>
Date: Wed, May 7, 2014 at 2:06 PM
Subject: Rocky Mountain Gateway South Project
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>

Dear Tamara Gertsch,

I96a I have lived on our farm in Oakcreek, Utah (two miles north of Fairview on the Milburn Road) for the past 35 years. The Gateway South project proposes to cross our alfalfa field. This will pretty much put us out of the hay growing business because I don't see how we can use wheel lines to water the crops with towers running through the field. Of course we don't want that, so that's why we are hoping the line will follow the BLM alternate route down Highway 6.

I96b Has anyone considered the fact that our area is not very stable? Snow College has an earthquake study center which has censors all over the county to measure activity. So this fact is easily verified. A drive up our Fairview Canyon Road (highway 31) shows evidence of several slide areas over a period of years. So why would RMP want chance their investment along this steep terrain??

Yours truly
Suzan Rasmussen

Response(s)

I96a Comment and route preference noted. Should this alternative route be selected design features of the Proposed Action for environmental protection and selective mitigation have been identified that would reduce potential impacts. The design features include 20, Design Features 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

I96b Comment and route preference noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

Comment(s)

I97 **Maria Ricks**

From: **Maria Ricks** <mmr1308@yahoo.com>
Date: Mon, May 12, 2014 at 11:19 AM
Subject: Citizen Comment (The Narrows Project)
To: GatewaySouth_WYMail@blm.gov

To Whom it May Concern,

I97a My real concern is that the lines not cross the path of The Narrows Project recreation area near Gooseberry. This would be devastating to the proposed project. Thank you.

Maria Ricks

Response(s)

I97a The Narrows Project is considered a past/present project in the cumulative effect analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11. Also, the Narrows Project recreation area is discussed in Section 3.2.12.

Comment(s)

I98 **Tim Riley**

---------- Forwarded message ----------
From: **Tim Riley** <teriley162@gmail.com>
Date: Fri, Mar 21, 2014 at 9:37 AM
Subject: Gateway South route through Utah
To: GatewaySouth_WYMail@blm.gov

I98a I wanted to add my voice to the public comment for this project. I think it is irresponsible to run such a highly visible project through an area of natural beauty such as the San Rafael Swell, including the Mounds area on the north side. Installing multiple 140-190 ft towers per mile would fundamentally alter this area and impact the multitude of other uses of these lands by the public.

This corridor should hew closely to existing infrastructure, such as the US 40 corridor. There is no need to run additional viewshed impacts through this part of Utah.

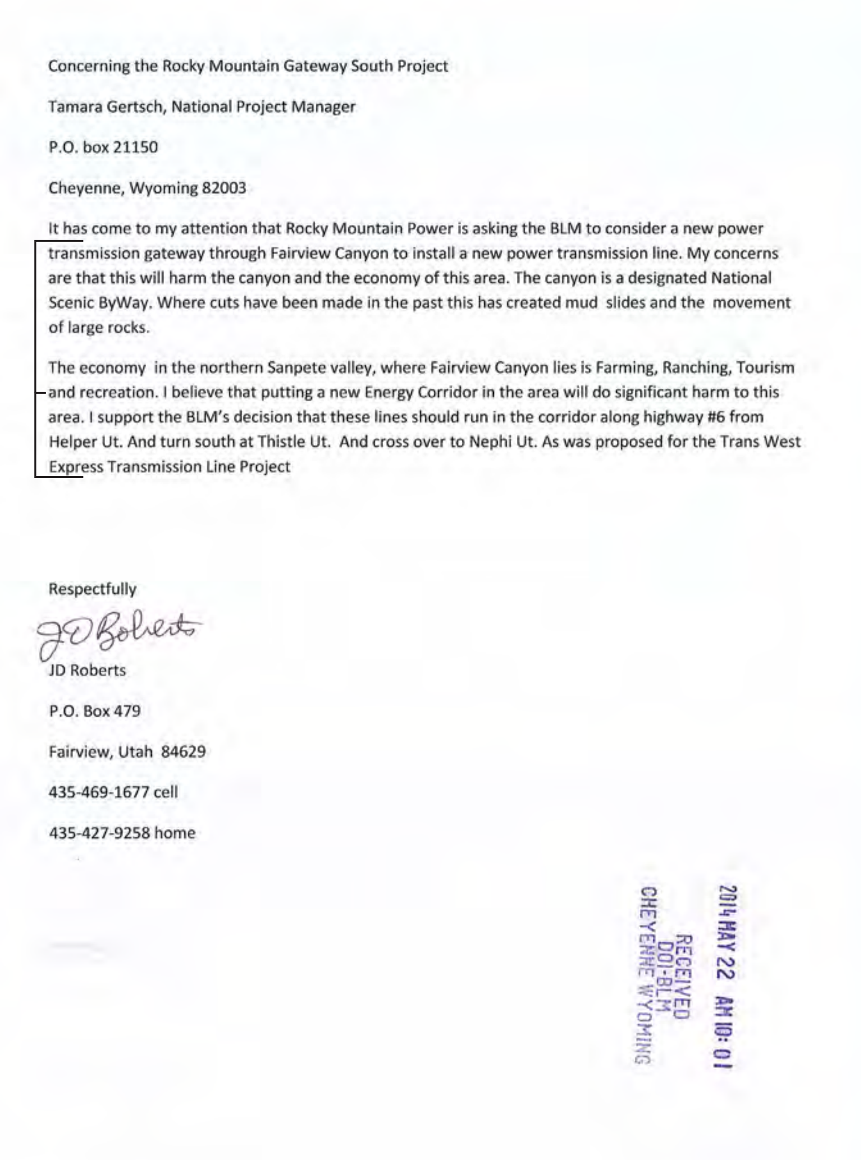
Response(s)

I98a All alternative routes and route variations contain areas of high impacts on visual resources, including the U.S. Highway 40 route. In regard to the COUT BAX routes, high impacts were documented on views and scenery in the San Rafael Swell, which in context with other resource concerns, led to these alternative routes not being selected as either the Agency or Applicant preferred alternatives.

Comment(s)

Response(s)

I99 **J.D. Roberts**



Concerning the Rocky Mountain Gateway South Project

Tamara Gertsch, National Project Manager

P.O. box 21150

Cheyenne, Wyoming 82003

I99a

It has come to my attention that Rocky Mountain Power is asking the BLM to consider a new power transmission gateway through Fairview Canyon to install a new power transmission line. My concerns are that this will harm the canyon and the economy of this area. The canyon is a designated National Scenic ByWay. Where cuts have been made in the past this has created mud slides and the movement of large rocks.

The economy in the northern Sanpete valley, where Fairview Canyon lies is Farming, Ranching, Tourism and recreation. I believe that putting a new Energy Corridor in the area will do significant harm to this area.

I99b

I support the BLM's decision that these lines should run in the corridor along highway #6 from Helper Ut. And turn south at Thistle Ut. And cross over to Nephi Ut. As was proposed for the Trans West Express Transmission Line Project

Respectfully

JD Roberts

JD Roberts

P.O. Box 479

Fairview, Utah 84629

435-469-1677 cell

435-427-9258 home

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

I99a

Construction workers could displace tourism temporarily in small towns with limited housing and lodging resources. These issues may be mitigated through working with counties and communities on these issues. These issues are best addressed during the county and/or state permitting phase of the project (e.g., the Wyoming Industrial Siting Permits). Additionally, the Applicant employs Customer and Community Managers to coordinate with local communities about these types of requirements, concerns, and recommendations.

In locations where the Project would dominate a natural setting, high impacts on those views were described in Section 3.2.18 and mapped on MV-21b in Volume II of the Final EIS. Impacts on the natural character of Fairview Canyon are also discussed in Section 3.2.18 and mapped on MV-23b. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

It is likely that the presence of the transmission line would affect where people participate in recreational activities in specific locations; however, it is unclear whether their presence would deter hunters and fishermen from visiting the general location, such as Fairview Canyon.

I99b

Comment and route preference noted.

Comment(s)

I100 **Don and Carolyn Robertson**

From: **Don Robertson** <cardon2@sfcn.org>
Date: Sat, May 31, 2014 at 7:31 AM
Subject: Rocky Mountain Gateway South Project
To: GatewaySouth_WYMail@blm.gov

I100a Please strongly consider the BLM alternate route for the Rocky Gateway South project. It seems to us much more reasonable because of easements which already exist. Also, farmland that would be destroyed in that area is very precious. We support the alternate route.
Don and Carolyn Robertson

Response(s)

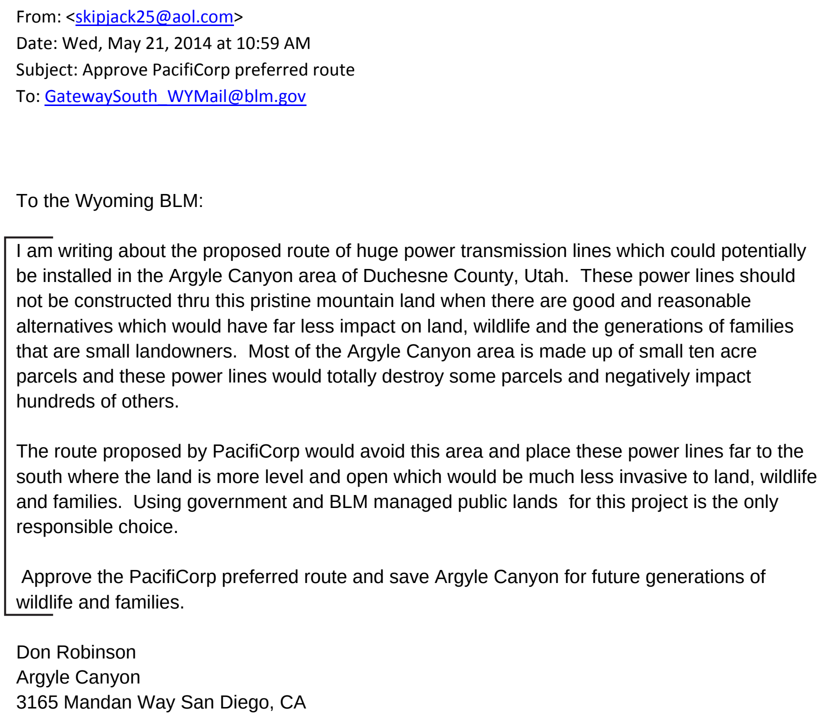
I100a Comment and route preference noted. The alternative route ultimately identified for construction has design features of the Proposed Action for environmental protection and selective mitigation identified that would reduce potential impacts. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

Comment(s)

Response(s)

I101 **Don Robinson**



From: <skipjack25@aol.com>
Date: Wed, May 21, 2014 at 10:59 AM
Subject: Approve PacifiCorp preferred route
To: GatewaySouth_WYMail@blm.gov

To the Wyoming BLM:

I101a

I am writing about the proposed route of huge power transmission lines which could potentially be installed in the Argyle Canyon area of Duchesne County, Utah. These power lines should not be constructed thru this pristine mountain land when there are good and reasonable alternatives which would have far less impact on land, wildlife and the generations of families that are small landowners. Most of the Argyle Canyon area is made up of small ten acre parcels and these power lines would totally destroy some parcels and negatively impact hundreds of others.

The route proposed by PacifiCorp would avoid this area and place these power lines far to the south where the land is more level and open which would be much less invasive to land, wildlife and families. Using government and BLM managed public lands for this project is the only responsible choice.

Approve the PacifiCorp preferred route and save Argyle Canyon for future generations of wildlife and families.

Don Robinson
Argyle Canyon
3165 Mandan Way San Diego, CA

I101a Comment and route preference noted.

Comment(s)

Response(s)

I102 **Tiffany Robinson**

From: <skipjack25@aol.com>
Date: Wed, May 21, 2014 at 11:17 AM
Subject: In favor of PacifiCorp preferred route
To: gatewaysouth_wymail@blm.gov

Wyoming BLM

I have spent my summers in the Argyle Canyon area of Duschesne County, Utah since I was 9 years old. This is a beautiful area of ridges, canyons, magnificent pines and open blue sky dotted with soaring hawks and eagles. The deer and elk roam freely along side many other animals and make this a magical place for a child to play, explore, observe and learn to respect the environment.

I102a

I would ask that you do not destroy this area with ugly power lines and towers and the devastation that construction would cause.

Please approve the PacifiCorp preferred route and protect my childhood playground.

Tiffany Robinson
Argyle Canyon
3165 Mandan Way, San Diego,Ca

I102a Comment and route preference noted.

Comment(s)

Response(s)

I103 **Janae Rowley**

From: **mjrowley** <mjrowley@ubtanet.com>
Date: Tue, May 20, 2014 at 12:43 PM
Subject: Fwd: Energy Gateway South Transmission Project Comment
To: GatewaySouth_WYMail@blm.gov

-------- Original Message --------

Subject: Energy Gateway South Transmission Project Comment
Date: Tue, 20 May 2014 12:38:48 -0600
From:mjrowley <mjrowley@ubtanet.com>
To:<GatewaySouthWYMail@blm.gov>

Attn: Tamara Gertsch,

My name is Janae Rowley. My husband and I own property inside one of the alternate routes of the Project, Unit U513. I mailed you a letter today and am emailing to make sure you receive my comment in time. We have a small cabin, a camp ground and 4-wheeler trails on this property. We use it frequently all summer and fall, almost every weekend. We have 8 children who enjoy our family tradition of going to our property. This 5 acres is the only flat part of our 35 acre parcel. We are strongly against the power line coming across our property. I103a

Thanks so much for a very informative open house this spring.

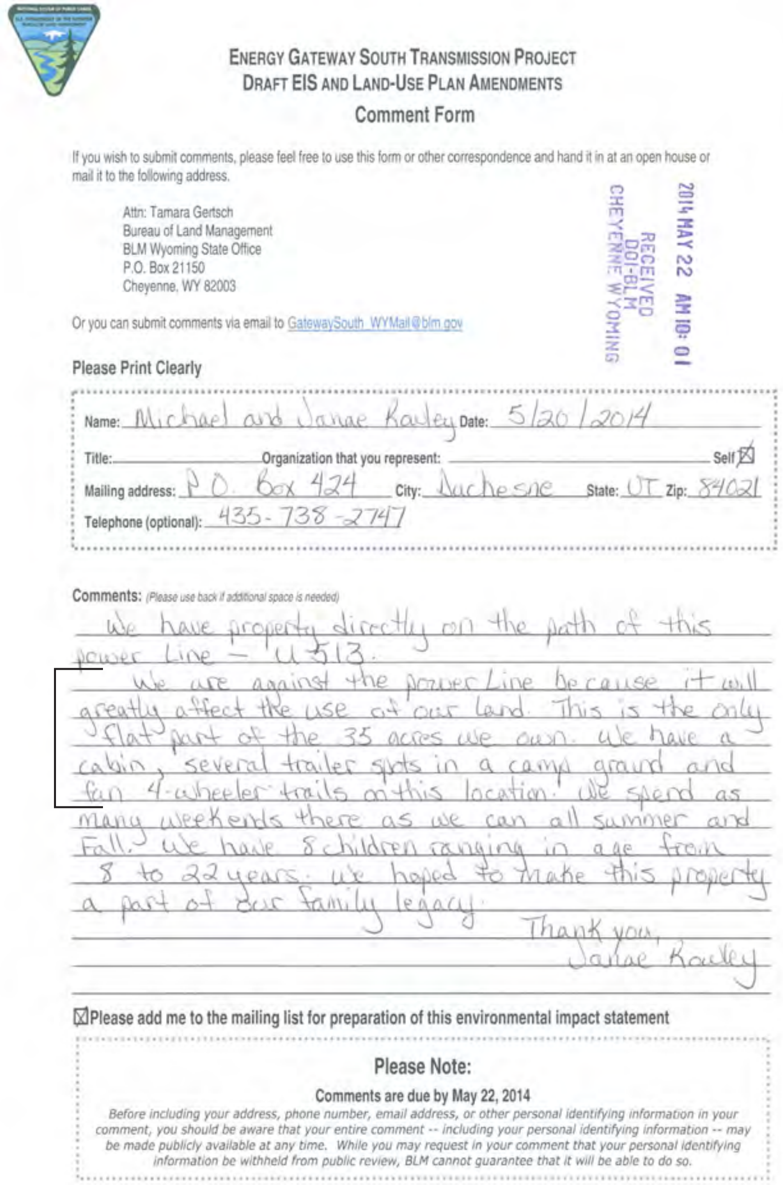
Thanks for your help,

Janae Rowley

I103a Comment and route preference noted.

Comment(s)

I104 | **Michael and Janae Rowley**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 MAY 22 AM 10: 01

Please Print Clearly

Name: Michael and Janae Rowley Date: 5/20/2014
Title: Organization that you represent: Self ☒
Mailing address: P.O. Box 424 City: Duchesne State: UT Zip: 84021
Telephone (optional): 435-738-2747

Comments: *(Please use back if additional space is needed)*

We have property directly on the path of this power Line – U513.

I104a

We are against the power Line because it will greatly affect the use of our land. This is the only flat part of the 35 acres we own. We have a cabin, several trailer spots in a camp ground and fun 4-wheeler trails on this location. We spend as many weekends there as we can all summer and Fall. We have 8 children ranging in age from 8 to 22 years. We hoped to make this property a part of our family legacy.

Thank you,
Janae Rowley

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I104a

Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant's standards, and industry best practices with regards to line clearances to vegetation and other structures.

Comment(s)

I105 **Archie and Angie Roybal**

From: <a.aroybal4@gmail.com>
Date: Wed, May 21, 2014 at 10:20 PM
Subject: Gateway South Comment
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>

To Whom it May Concern:

I105a Let it be known that we, Archie and Angie Roybal, are in agreement with the W30 and W36 preferred route as shown on Gateway South Transmission project map. It is away from the current established residences at Fort Steele. It is very important that all involved BLM, Gateway officials, etc. work to ensure that all human life is not near this enormous amount of electromagnetic field. The BLM mission statement states that, "It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations." Therefore we feel confident that all involved will ensure that the power lines remain away from human life.

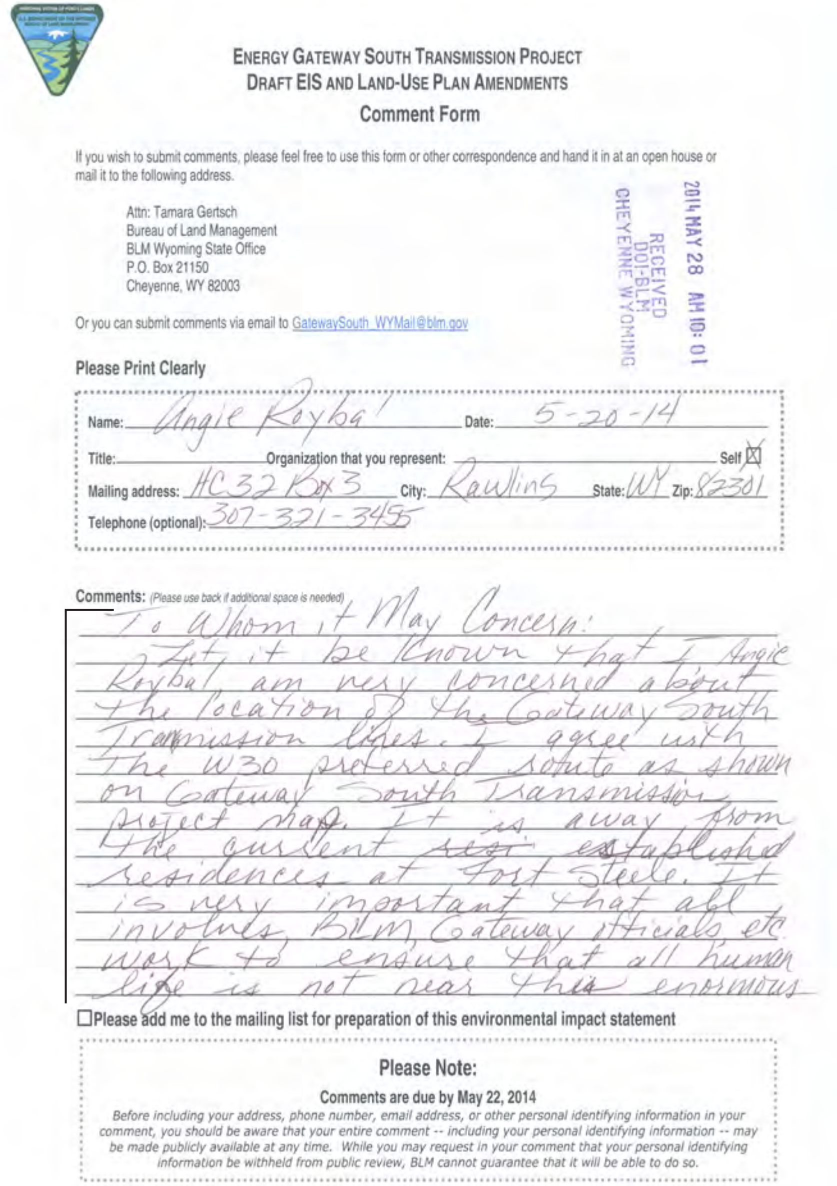
Sincerely,
Archie and Angie Roybal
a.aroybal4@gmail.com

Response(s)

I105a Comment and route preference noted.

Comment(s)

I106 | **Angie Roybal**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 MAY 28 AM 10:01

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Angie Roybal Date: 5-20-14
Title: Organization that you represent: Self ☒
Mailing address: HC 32 Box 3 City: Rawlins State: WY Zip: 82301
Telephone (optional): 307-321-3455

Comments: *(Please use back if additional space is needed)*

I106a To Whom it May Concern:
Let it be known that I Angie Roybal, am very concerned about the location of the Gateway South Transmission lines. I agree with The W30 preferred route as shown on Gateway South Transmission project map. It is away from the current ~~resi~~ established residences at Fort Steele. It is very important that all involves, BLM, Gateway officials, etc work to ensure that all human life is not near this enormous

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

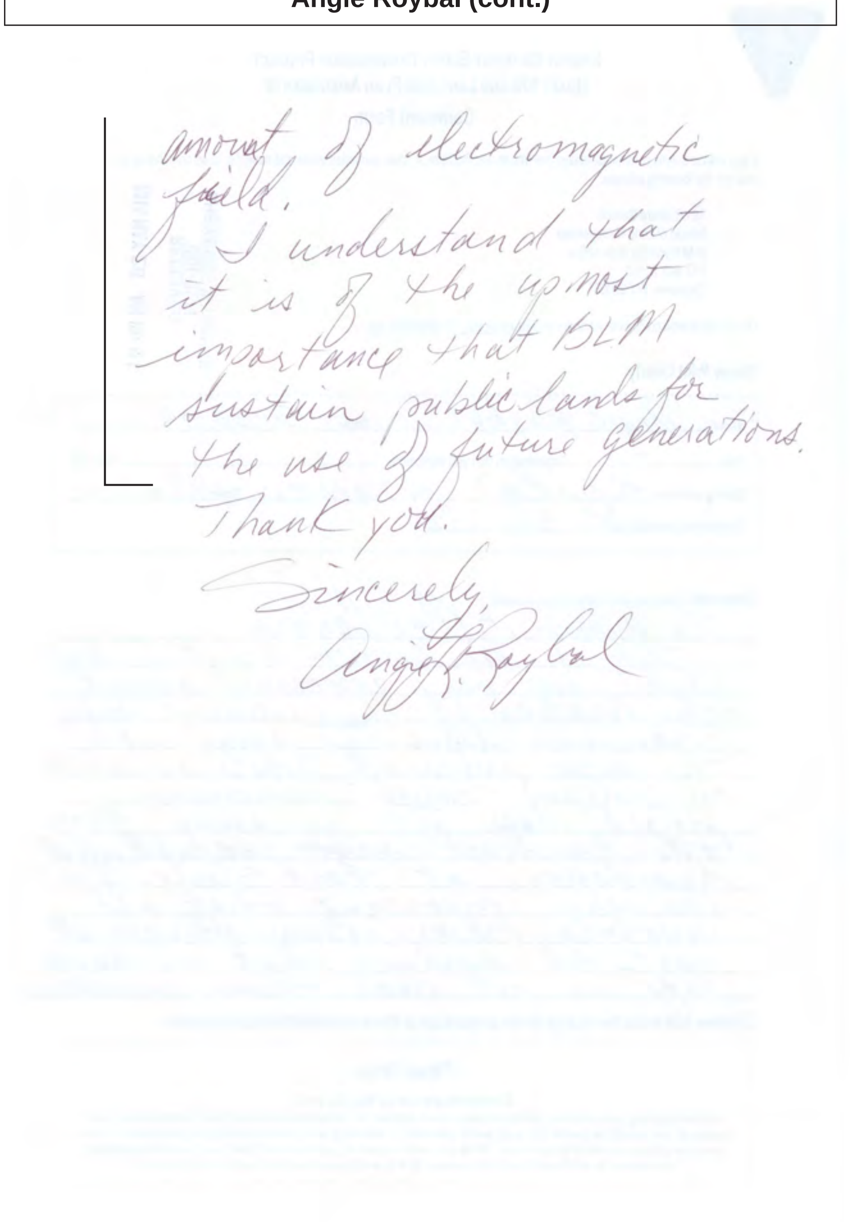
Response(s)

I106a Comment and route preference noted.

Comment(s)

Response(s)

I106 **Angie Roybal (cont.)**



I106a

amount of electromagnetic field.

I understand that it is of the upmost importance that BLM sustain public lands for the use of future generations.

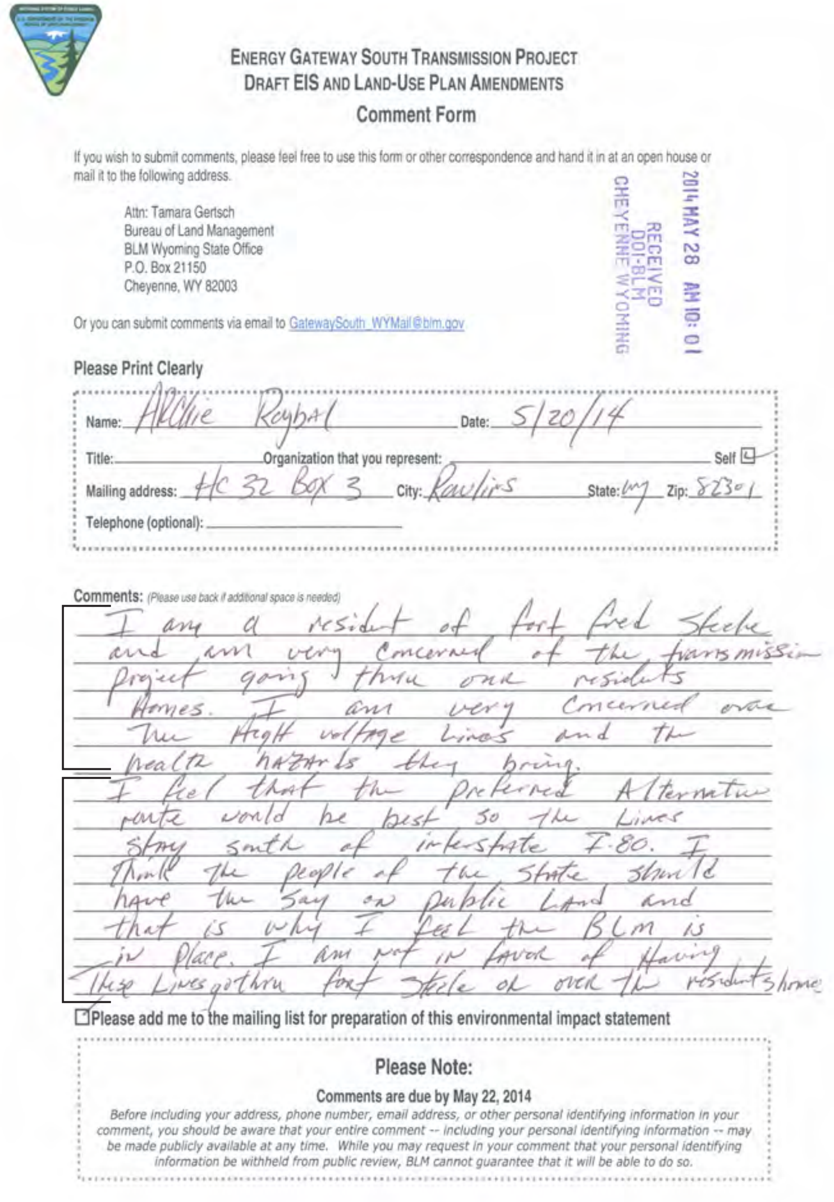
Thank you.

Sincerely,

Angie J. Roybal

Comment(s)

I107 | **Archie Roybal**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 MAY 28 AM 10: 01

Please Print Clearly

Name: Archie Roybal Date: 5/20/14
Title: Organization that you represent: Self ☑
Mailing address: HC 32 Box 3 City: Rawlins State: wy Zip: 82301
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I107a I am a resident of fort fred Steele and am very concerned of the transmission project going thru our residents Homes. I am very concerned over The High voltage Lines and the health hazards they bring.

I107b I feel that the preferred Alternative route would be best so the Lines stay south of interstate I-80. I think the people of the State should have the say on public Land and that is why I feel the BLM is in place. I am not in favor of Having these Lines go thru fort Steele or over the residents home

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

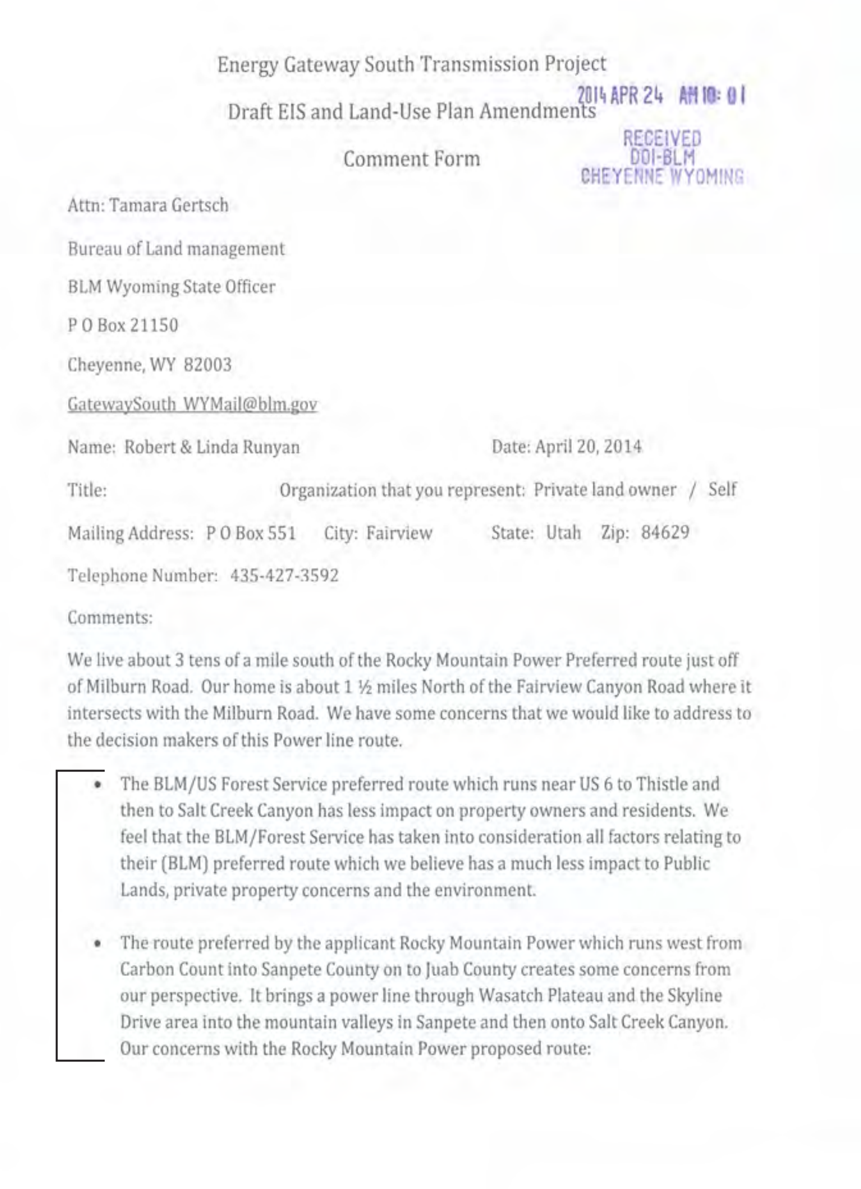
I107a The Applicant is aware of concerns regarding possible health risks from EMFs; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

I107b Comment and route preference noted.

Comment(s)

Response(s)

I108 **Robert R. and Linda S. Runyan**



Energy Gateway South Transmission Project

Draft EIS and Land-Use Plan Amendments

Comment Form

2014 APR 24 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Attn: Tamara Gertsch

Bureau of Land management

BLM Wyoming State Officer

P O Box 21150

Cheyenne, WY 82003

GatewaySouth_WYMail@blm.gov

Name: Robert & Linda Runyan Date: April 20, 2014

Title: Organization that you represent: Private land owner / Self

Mailing Address: P O Box 551 City: Fairview State: Utah Zip: 84629

Telephone Number: 435-427-3592

Comments:

We live about 3 tens of a mile south of the Rocky Mountain Power Preferred route just off of Milburn Road. Our home is about 1 ½ miles North of the Fairview Canyon Road where it intersects with the Milburn Road. We have some concerns that we would like to address to the decision makers of this Power line route.

I108a

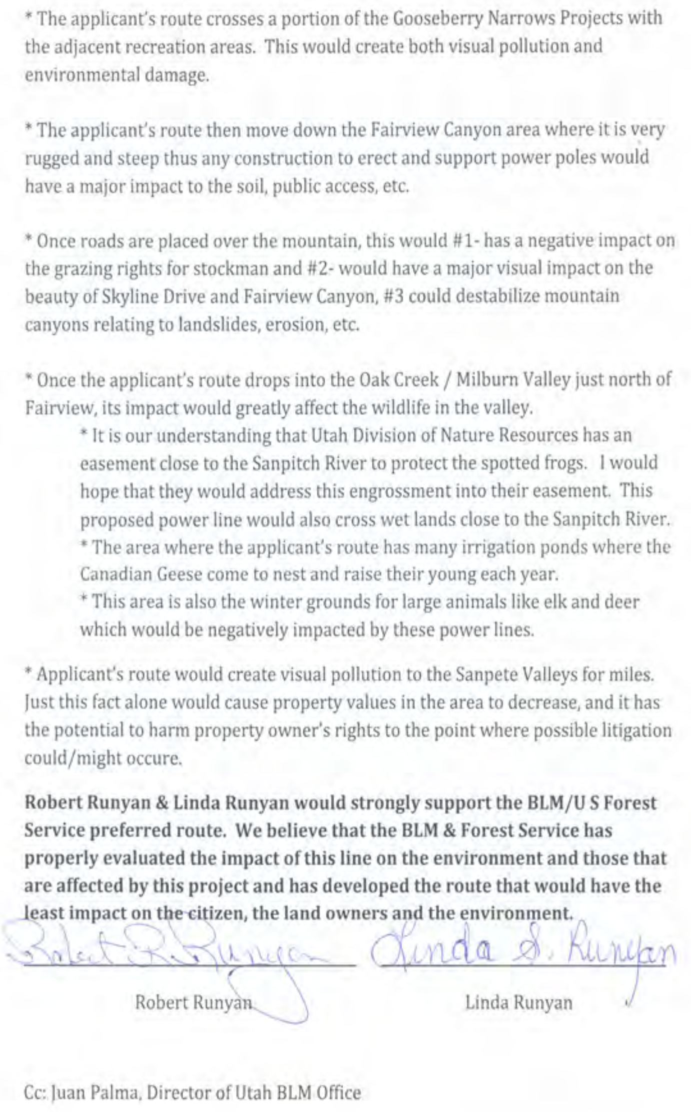
- The BLM/US Forest Service preferred route which runs near US 6 to Thistle and then to Salt Creek Canyon has less impact on property owners and residents. We feel that the BLM/Forest Service has taken into consideration all factors relating to their (BLM) preferred route which we believe has a much less impact to Public Lands, private property concerns and the environment.
- The route preferred by the applicant Rocky Mountain Power which runs west from Carbon Count into Sanpete County on to Juab County creates some concerns from our perspective. It brings a power line through Wasatch Plateau and the Skyline Drive area into the mountain valleys in Sanpete and then onto Salt Creek Canyon. Our concerns with the Rocky Mountain Power proposed route:

I108a Comment and route preference noted.

Comment(s)

Response(s)

I108 **Robert R. and Linda S. Runyan (cont.)**



I108b

* The applicant's route crosses a portion of the Gooseberry Narrows Projects with the adjacent recreation areas. This would create both visual pollution and environmental damage.

I108c

* The applicant's route then move down the Fairview Canyon area where it is very rugged and steep thus any construction to erect and support power poles would have a major impact to the soil, public access, etc.

I108d

* Once roads are placed over the mountain, this would #1- has a negative impact on the grazing rights for stockman and #2- would have a major visual impact on the beauty of Skyline Drive and Fairview Canyon, #3 could destabilize mountain canyons relating to landslides, erosion, etc.

* Once the applicant's route drops into the Oak Creek / Milburn Valley just north of Fairview, its impact would greatly affect the wildlife in the valley.

I108e

  * It is our understanding that Utah Division of Nature Resources has an easement close to the Sanpitch River to protect the spotted frogs. I would hope that they would address this engrossment into their easement. This proposed power line would also cross wet lands close to the Sanpitch River.
  * The area where the applicant's route has many irrigation ponds where the Canadian Geese come to nest and raise their young each year.
  * This area is also the winter grounds for large animals like elk and deer which would be negatively impacted by these power lines.

I108f

* Applicant's route would create visual pollution to the Sanpete Valleys for miles. Just this fact alone would cause property values in the area to decrease, and it has the potential to harm property owner's rights to the point where possible litigation could/might occure.

I108g

Robert Runyan & Linda Runyan would strongly support the BLM/U S Forest Service preferred route. We believe that the BLM & Forest Service has properly evaluated the impact of this line on the environment and those that are affected by this project and has developed the route that would have the least impact on the citizen, the land owners and the environment.

Robert R. Runyan Linda S. Runyan

Robert Runyan Linda Runyan

Cc: Juan Palma, Director of Utah BLM Office

I108b The Narrows Project is considered a past/present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future project). This project will be discussed in the Authorized Projects portion of Section 3.2.11 and will be analyzed in the cumulative effects analysis as a past/present project. The Narrows Project recreation area is discussed in Section 3.2.12.

I108c Comment and route preference noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5.

I108d Refer to Section 3.2.11.5 and Appendix L for a discussion of impacts on grazing allotments, Section 3.2.18 for discussions related to Visual Resource impacts, and Section 3.2.2 for information regarding landslides, erosion, etc.

I108e See next page for response to I108e

I108f Comment and route preference noted. Potential impacts on property values are discussed in Section 3.2.22.5.2.

I108g Comment and route preference noted.

Comment(s)

Response(s) - continued

I108 **Robert R. and Linda S. Runyan (cont.)**

I108e

Additional information regarding two conservation agreements for Columbia spotted frog located near the Sanpitch River (the Nuttall Farms and Crawford Farms conservation easements) have been incorporated into Sections 3.2.10.4 and 3.2.15) and Appendix J of the Final EIS. Preconstruction surveys would be conducted for sensitive species to identify locations where relevant selective mitigation measures and design features would be applied.

Impacts on migratory birds are discussed in Section 3.2.9 and would also be reduced through the application of relevant design features and selective mitigation measures listed in Tables 2-8 and 2-13.

Impacts on big game habitat, bald eagles and other raptors, and migratory birds in the Fairview Valley area are addressed in Sections 3.2.7.5.4 and 3.2.9.

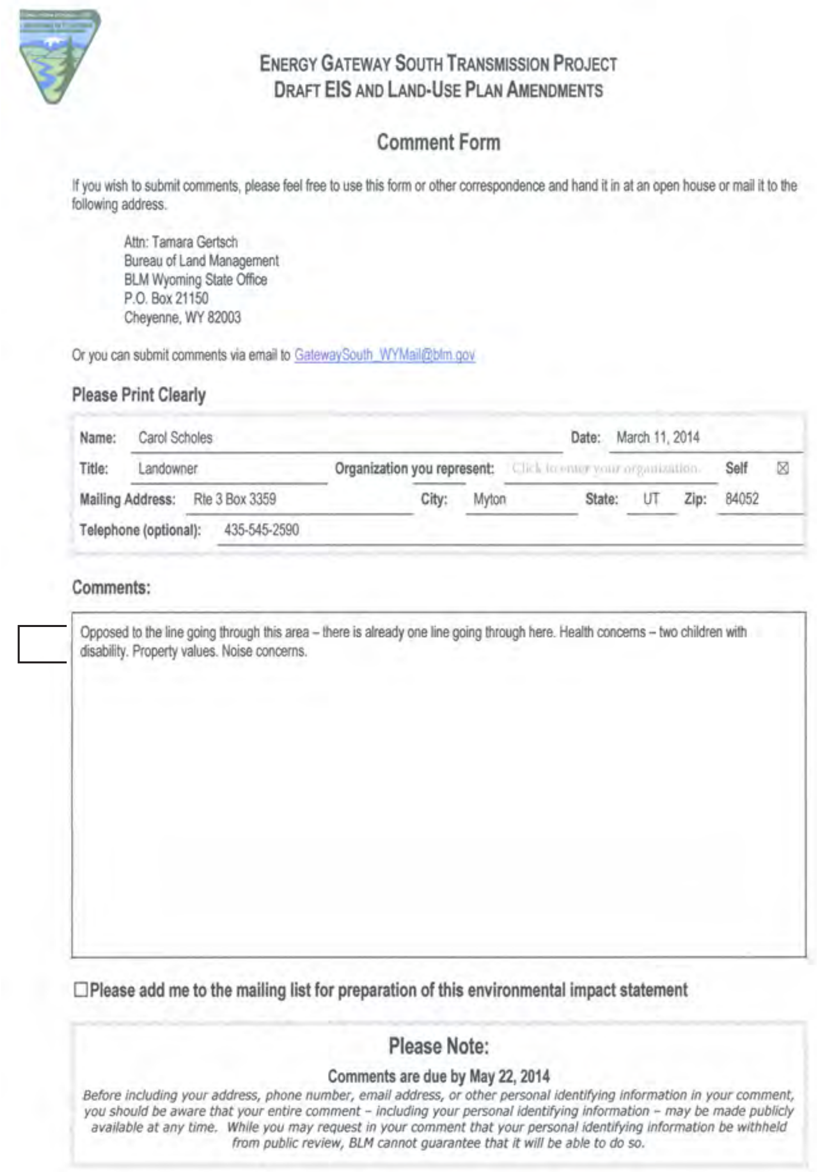
The BLM continues to work closely with FWS and the Applicant to develop avoidance and minimization measures to reduce effects or avian species based on industry best practices. Design features of the Proposed Action and site-specific selective mitigation measures to reduce effects of the Project on avian species are listed in Section 3.2.9, Mitigation Planning and Effectiveness. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys).

Impacts on big game habitat would be reduced through the application of relevant design features and selective mitigation measures listed in Table 3-80.

Comment(s)

Response(s)

I109 **Carol Scholes**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS

Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Carol Scholes **Date:** March 11, 2014
Title: Landowner **Organization you represent:** Click to enter your organization. **Self** ☒
Mailing Address: Rte 3 Box 3359 **City:** Myton **State:** UT **Zip:** 84052
Telephone (optional): 435-545-2590

Comments:

I109a Opposed to the line going through this area – there is already one line going through here. Health concerns – two children with disability. Property values. Noise concerns.

☐**Please add me to the mailing list for preparation of this environmental impact statement**

Please Note:

Comments are due by May 22, 2014

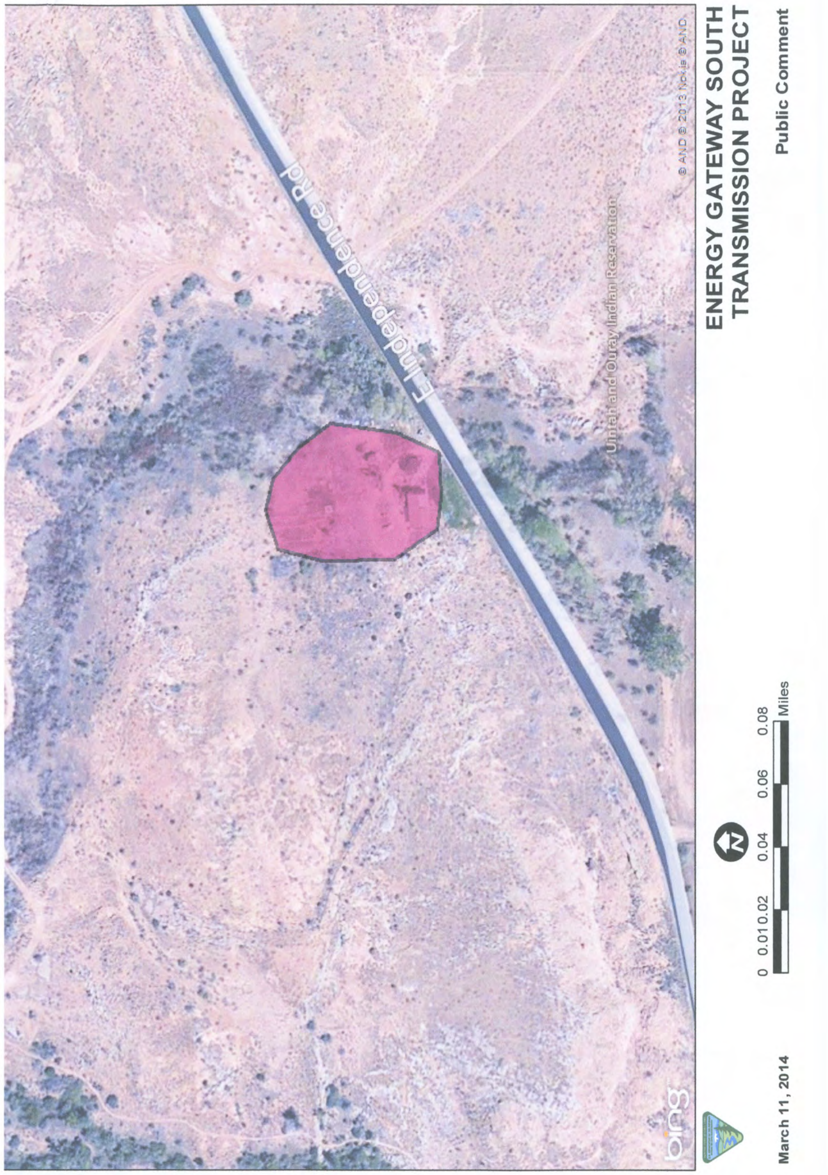
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I109a Comment and route preference noted. Potential health concerns, property value and noise are discussed in Sections 3.2.22 and 3.2.23.

Comment(s)

Response(s)

I109 **Carol Scholes (cont.)**



Comment(s)	Response(s)
I110 **Robert Scott**	
From: **Robert Scott** <rscottrses@comcast.net> Date: Tue, May 20, 2014 at 9:16 AM Subject: DEIS comments Gtwy So. To: GatewaySouth_WYMail@blm.gov	
I110a Please explain why the routes are so different between Gateway So. and TransWest Express in Utah west of Dinosaur NM. They are mostly coincident from Wyoming to here. Why does the Agency Preferred Alternative differ so much assuming the same siting and routing criteria were employed, as well as environmental effects resulting. Each seems to to handle the Robber's Roost ACEC differently in terms of how best to avoid impacts to the BLM resource.	I110a The alignment preferred by the BLM Little Snake Field and, therefore, the BLM's preferred alignment along the path of the agency-preferred route, is the alignment in the West-wide Energy Corridor, parallel to the Bears Ears to Bonanza 345-kilovolt transmission line, crossing the area designated as the Tuttle Ranch Conservation Easement. The BLM also prefers the alignment be colocated approximately 300 feet from the route alignment for the TransWest Express transmission project. The BLM's intent is to reduce the amount of potential impacts and avoid potential proliferation of transmission lines across the landscape in accordance with the Federal Land Policy and Management Act of 1976.

Comment(s)

Response(s)

I111 **Cherilyn T. Searle**

From: **Cherilyn Searle** <chertuck@gmail.com>
Date: Sun, May 18, 2014 at 8:45 PM
Subject: Re. Energy Gateway South
To: GatewaySouth_WYMail@blm.gov

Attn: Tamara Gertsch

May 18, 2014

I111a I am writing this to protest against running those huge power lines down Fairview Canyon which is one of the proposed routes. My grandparents as well as my parents were born in Fairview. My husband and I currently live in Fairview. As I grew up, activities involving Fairview Canyon were very much a part of my life. For many years our week-long family reunion was held at what is now called Flat Canyon. It has always been the place we went to for camping , fishing , and enjoying the outdoors. We have a camping site up Fairview Canyon where we take our trailer every year and enjoy many family activities. My son snow kites at mile marker 14 and on the European websites Mile Marker 14 in Fairview Canyon is known as one of the best places to snow kite. Fairview's main claim to fame is it's proximity to Fairview Canyon.

I111b For over 70 years Sanpete County has been fighting for the Narrows project which would bring much needed water to our valley and would be another source for great outdoor entertainment as well. Ugly power lines running through the canyon would certainly effect these activities and could be another problem for getting the Narrows project through. In addition, if the Narrows project goes through it will bring much needed business to our little town Please stick with the proposed northern route and do not allow this travesty to be developed in our pristine canyon.

Cherilyn T. Searle

PO Box 204

Fairview, Utah 84629

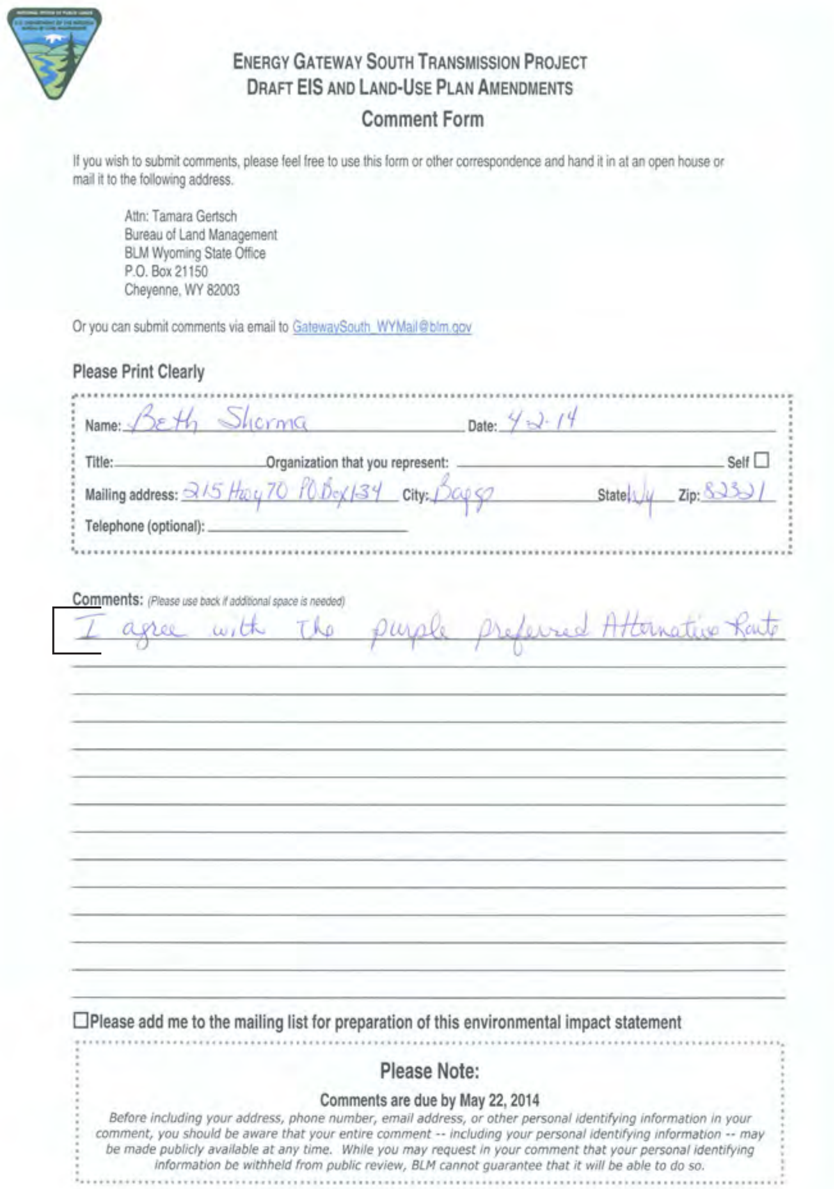
I111a Comment and route preference noted.

I111b The Narrows Project is considered a past/present project in the cumulative effect analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11 and will be analyzed in the cumulative effects analysis as a past/present project. The Narrows Project recreation area is discussed in Section 3.2.12.

Comment(s)

Response(s)

I112 **Beth Shorma**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Beth Shorma Date: 4-2-14
Title: Organization that you represent: Self ☐
Mailing address: 215 Hwy 70 PO Box 134 City: Baggs State: Wy Zip: 82321
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I112a I agree with the purple preferred Alternative Route

☐Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I112a Comment and route preference noted.

Comment(s)

I113 **Justin Slaughter**

From: **Justin Slaughter** <jslaught@emerytelcom.net>
Date: Wed, May 21, 2014 at 8:17 PM
Subject: Concerning the proposed Energy Gateway South Transmission Project through Argyle Canyon
To: GatewaySouth_WYMail@blm.gov

Hello Tamara,

Please let me introduce myself as a concerned landowner in Argyle Canyon. I am not against, nor do I oppose this transmission line project. I realize that change is inevitable and I support the number of jobs that this project will provide to many individuals.

I113a

What I do not support is the BLM suggestion to take this transmission line project through the privately owned property in Argyle Canyon when other preferred routes are available.

Some concerns that I have about running these transmission lines through Argyle Canyon:

* The ROW needed for these lines would take out a large amount of forested area and possibly cabins.

* Transmission lines would take away from the beauty of the canyon.

* Additional service roads would be needed – thus taking more land away from property owners.

* The constant humming and buzzing of these transmission lines would take away from the piece and quiet of Argyle Canyon. Are there any long term health risks posed from this constant humming and buzzing?

* If these transmission lines are allowed through Argyle Canyon then this could “open the door” for other utilities and lines to come through the canyon.

* Privately owned property sees little use in comparison to public property. Privately owned property is more like wilderness – why change and destroy this?

* Many of the parcels in Argyle Canyon are 10 square acre parcels. A 250’ Right of way through this would take out approximately 4 acres of property.

*These transmission lines would cause destruction to property and land while having no benefit to the land owners or even to Utah residents.

* There are Church owned camping areas as well as other large camping areas in the canyon. Kids of all ages attend these camp areas and participate in many forms of outdoor recreation. How safe are such recreational activities in the presence of high power transmission lines?

Response(s)

I113a

Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant’s standards, and industry best practices with regards to line clearances to vegetation and other structures.

Visual resources impacts are discussed in Section 3.2.18. Simulations depicting what the transmission line will look like are included in Appendix M.

A detailed access road plan will be developed in the POD for the Project. Disturbance acres and miles reported for the Project include all Project features (e.g., access roads, temporary laydown areas, structure pads, etc.). Construction of access roads will be coordinated with the applicable land-management agency and/or landowner to ensure existing roads are used first; and if new roads need to be constructed, it would be done in accordance with the land-management agency.

Public Health and Safety (including noise) impacts is discussed in Section 3.2.23. The applicant is aware of concerns about possible health risks from EMF; however, the effects of EMF are not conclusive. As identified in design features of the Proposed Action for environmental protection (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on electric magnetic field research. The Applicant relies on the findings of public health specialists and international scientific organizations for guidelines regarding electric magnetic fields. EMFs are discussed in greater detail in section 3.2.23 of the EIS.

An assessment of potential cumulative effects is presented in Chapter 4 for each alternative route and route variation considered.

The Agency Preferred Alternative on federal lands will be the alternative route the BLM, in coordination with the cooperating agencies, believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. Refer to Section 2.7.1 for more information.

Regarding private lands, the impact on property rights will be carefully considered by the Applicant during micro-siting. The Applicant will negotiate with the owners of real property interests to ensure that, if any private property interests are impaired by the final location, they are appropriately compensated. The project will be built in compliance with NESC, the Applicant’s standards, and industry best practices with regards to line clearances to vegetation and other structures.

(*Response continued on next page.*

Comment(s)

I113 **Justin Slaughter (cont.)**

Please reconsider this proposed route through beautiful and scenic Argyle Canyon. Please keep it on public lands, doing so would respect and preserve the rights of the many landowners in the Argyle Canyon area.

Sincerely,

Justin Slaughter
2780 South 710 West
Price, UT 84501

Response(s)

I113a cont.

The Applicant's interests and objectives are discussed in Appendix A.

To establish the resource database for analysis for the EIS, the EIS team gathered, compiled, and analyzed existing data provided by federal, state, and local agencies and other credible public sources of information. If data indicated the presence of a camp, the facility was avoided to the extent practicable and/or located in such a way that activities at the facility are not affected (visually or physically). However, in some cases, data received did not indicate the presence of recreational uses, particularly on private land where specific uses may not be evident in the public data. Such is the case with Camp Timberlane and other camps administered by the CPB.

Regarding Camp Timberlane, when data were compiled, data received for the area indicated privately owned parcels and did not indicate existence of an organized recreational youth camp. Comments on the Draft EIS from the CPB provided information to the EIS team of the recreational use of the area. In response to this new information, representatives of the CPB, Applicant, and BLM met in April 2014 to discuss the CPB properties. Subsequently, the Applicant identified route variations in this area that would avoid Camp Timberlane while considering other existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed for the Final EIS and are addressed in Appendix F.

Comment(s)

Response(s)

I114 **Michelle Slaughter**

From: **Michelle Slaughter** <mommymichelle02@yahoo.com>
Date: Wed, May 21, 2014 at 9:17 PM
Subject: Energy Gateway South Transmission Project
To: "GatewaySouth_WYMail@blm.gov" <GatewaySouth_WYMail@blm.gov>

Hello,

I114a I would like to take just a few minutes of your time and ask for the proposed route for this transmission project through Argyle Canyon be reconsidered. I understand there are pros and cons for all routes, however I understand there is alternative route preferred by the power company that would eliminate the need of impacting numerous private landowners.

This proposed route through Argyle Canyon has the potential of taking away homesteaded properties and destroying nature's beauty that has taken thousands of years to be what it is today; natural and beautiful. These wilderness like characteristics are becoming more and more rare each day thanks to development and industry.

Your reconsideration of this proposed route would be very much appreciated.

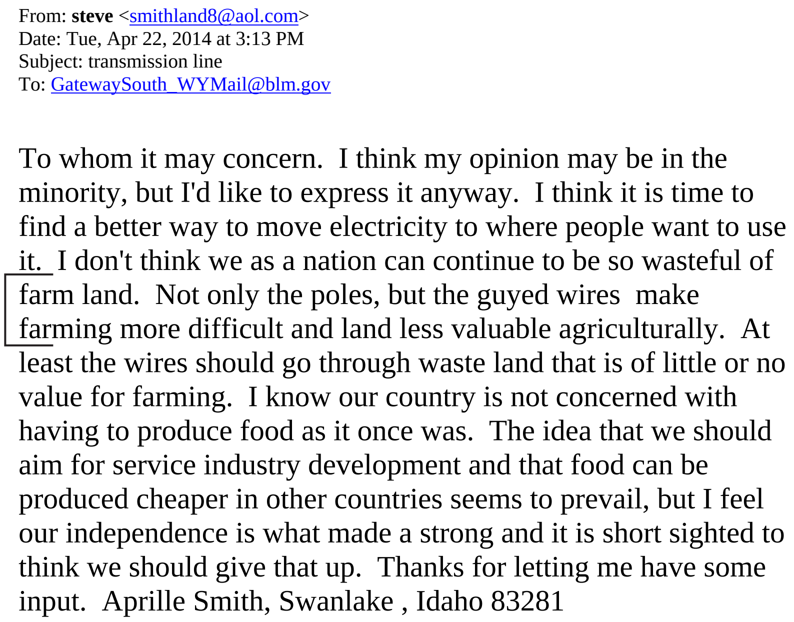
Thank you.

Michelle Slaughter
2780 S. 710 W.
Price, UT 84501

I114a Comment and route preference noted.

Comment(s)

I115 | **Aprille Smith**



From: **steve** <smithland8@aol.com>
Date: Tue, Apr 22, 2014 at 3:13 PM
Subject: transmission line
To: GatewaySouth_WYMail@blm.gov

To whom it may concern. I think my opinion may be in the minority, but I'd like to express it anyway. I think it is time to find a better way to move electricity to where people want to use it. I115a I don't think we as a nation can continue to be so wasteful of farm land. Not only the poles, but the guyed wires make farming more difficult and land less valuable agriculturally. At least the wires should go through waste land that is of little or no value for farming. I know our country is not concerned with having to produce food as it once was. The idea that we should aim for service industry development and that food can be produced cheaper in other countries seems to prevail, but I feel our independence is what made a strong and it is short sighted to think we should give that up. Thanks for letting me have some input. Aprille Smith, Swanlake , Idaho 83281

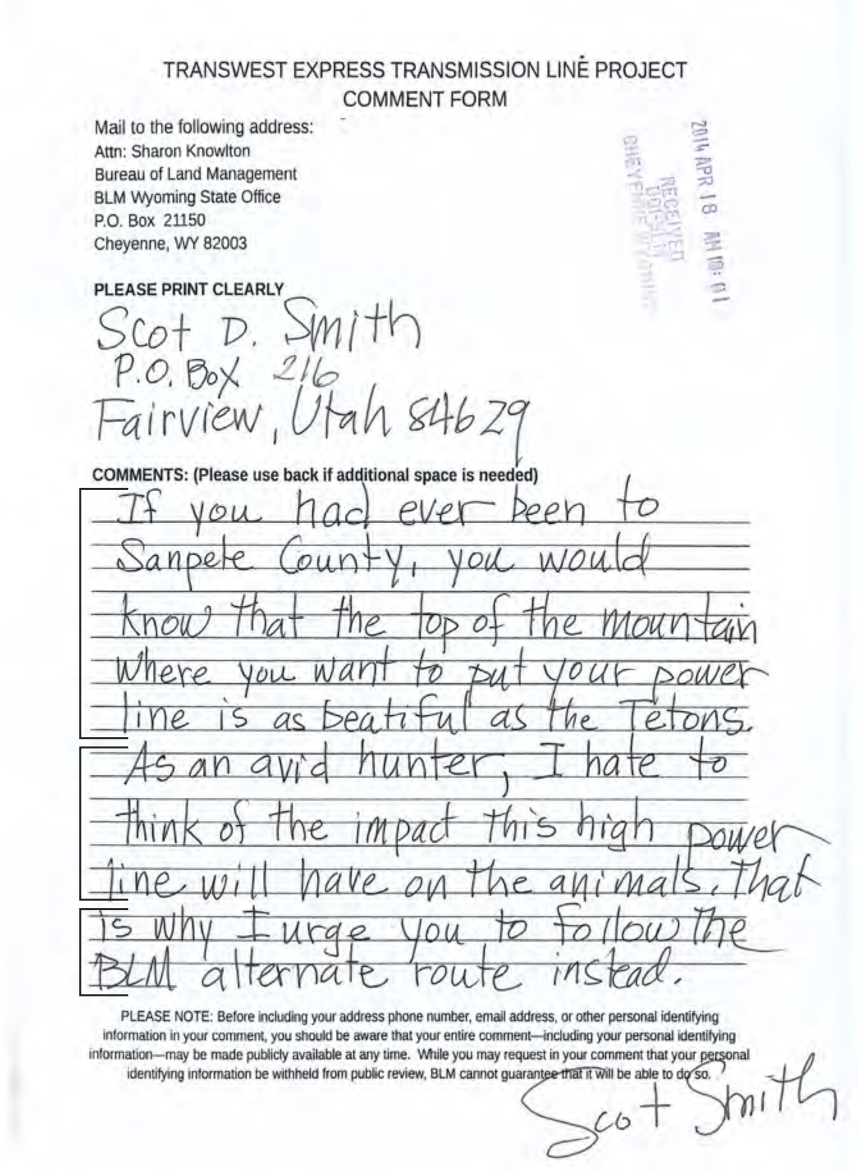
Response(s)

I115a Since publication of the Draft EIS, the Applicant has reused their project description to propose both guyed and self-supporting tangent structure conficurations as the predominant type of structures (refer to Section 2.3.1.1). Analysis in the Final EIS has been updated to reflect the change in predominant structure types. To reduce potential impacts on agricultural land, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include 20, 22, 23, 26, and 27. The selective mitigation measures include 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

Comment(s)

I116 **Scot Smith**



TRANSWEST EXPRESS TRANSMISSION LINE PROJECT
COMMENT FORM

Mail to the following address:
Attn: Sharon Knowlton
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

2014 APR 18 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

PLEASE PRINT CLEARLY

Scot D. Smith
P.O. Box 216
Fairview, Utah 84629

COMMENTS: (Please use back if additional space is needed)

I116a If you had ever been to Sanpete County, you would know that the top of the mountain where you want to put your power line is as beatiful as the Tetons.

I116b As an avid hunter, I hate to think of the impact this high power line will have on the animals. That

I116c is why I urge you to follow the BLM alternate route instead.

PLEASE NOTE: Before including your address phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Scot Smith

Response(s)

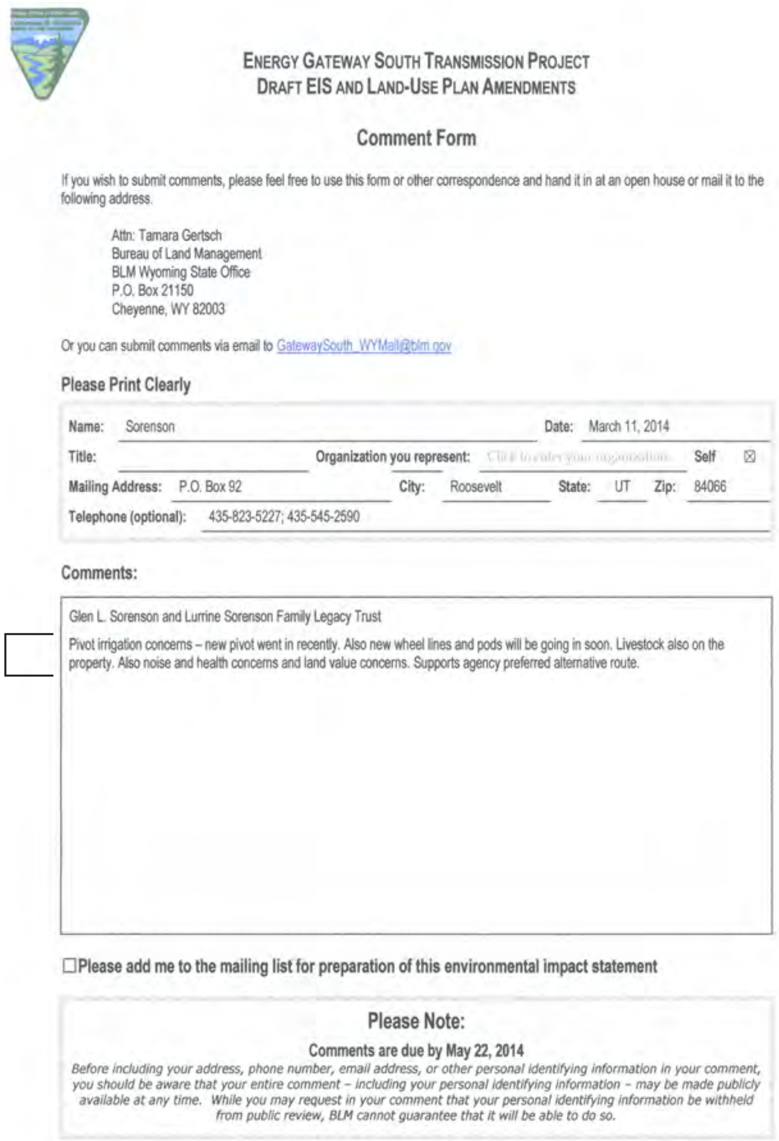
I116a Due to the aesthetic quality of scenery on the Wasatch Plateau and the intact landscape character, high impacts were assessed on scenery above Fairview. Furthermore, high impacts on views from residences and the scenic byway were assessed. These impacts led to the application of selective mitigation measures to reduce these effects to the extent practicable. Based on high impacts in this area and other resource effects this alternative route was not selected as the Agency Preferred Alternative.

I116b Comment noted. Impacts to biological resources, including wildlife in this area, are discussed in Section 3.2.7 and 3.2.8.

I116c Comment and route preference noted.

Comment(s)

I117 **Glen L. and Lurrine Sorenson Family Trust**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS

Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Sorenson **Date:** March 11, 2014
Title: **Organization you represent:** Click to enter your organization. **Self** ☒
Mailing Address: P.O. Box 92 **City:** Roosevelt **State:** UT **Zip:** 84066
Telephone (optional): 435-823-5227; 435-545-2590

Comments:

Glen L. Sorenson and Lurrine Sorenson Family Legacy Trust

I117a Pivot irrigation concerns – new pivot went in recently. Also new wheel lines and pods will be going in soon. Livestock also on the property. Also noise and health concerns and land value concerns. Supports agency preferred alternative route.

☐**Please add me to the mailing list for preparation of this environmental impact statement**

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I117a To reduce potential impacts on agricultural irrigation systems and livestock, design features of the Proposed Action for environmental protection and selective mitigation measures have been identified for the Project. The design features include Design Features 20, 22, 23, 26, and 27. The selective mitigation measures include Selective Mitigation Measures 1 and 11. Information discussing these design features and selective mitigation measures can be found in Chapter 2 and Section 3.2.11.4.2.

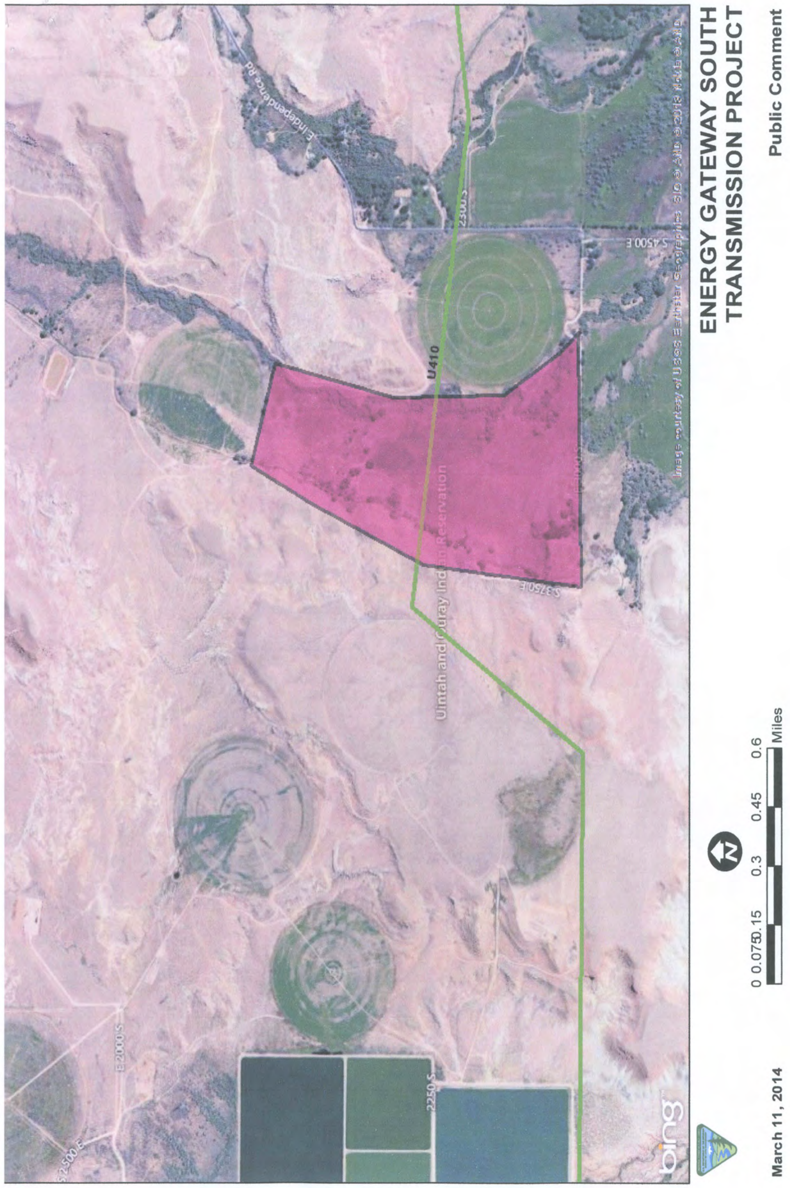
In general, these design features and selective mitigation measures are designed to align the right-of-way on agricultural land insofar as is practicable to reduce the impact on farm operations and agricultural production.

Public health and safety (including noise) is addressed in Section 3.2.23 of the Final EIS. The applicant is aware of concerns about possible health risks from EMF; however, the effects of EMF are not conclusive. As identified in design features of the Proposed Action for environmental protection of the proposed action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on electric magnetic field research. The Applicant relies on the findings of public health specialists and international scientific organizations for guidelines regarding electric magnetic fields. EMFs are discussed in greater detail in section 3.2.23 of the EIS.

Comment(s)

Response(s)

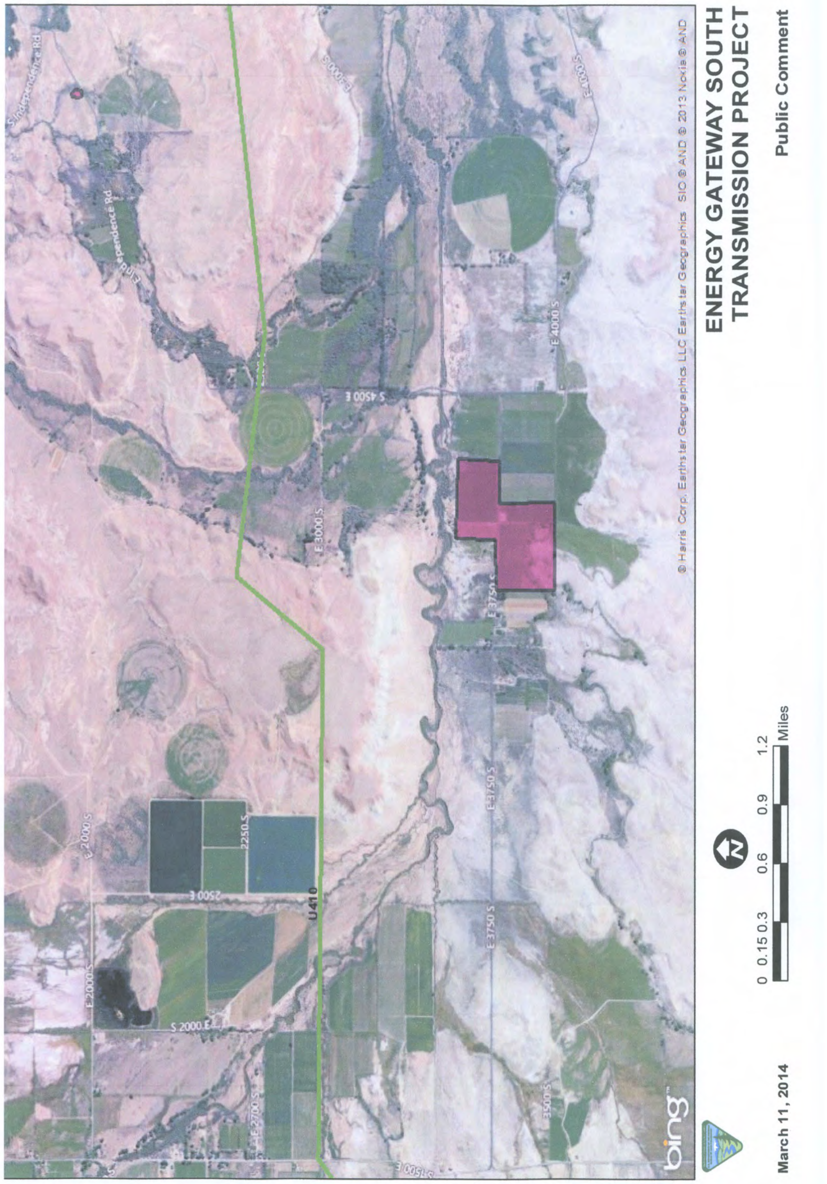
I117 **Glen L. and Lurrine Sorenson Family Trust (cont.)**



Comment(s)

Response(s)

I117 **Glen L. and Lurrine Sorenson Family Trust (cont.)**



Comment(s)

I118 **Nancy Stocker**

From: **Nancy Stocker** <Nancy@prairiewildlife.net>
Date: Tue, May 20, 2014 at 10:01 PM
Subject: DEIS Comment
To: GatewaySouth_WYMail@blm.gov

Energy Gateway South Project
Bureau of Land Management
P.O. Box 21150
Cheyenne, WY 82003

Re: DEIS Gateway South Transmission Line Project

Thank you for this opportunity to comment on the Gateway South DEIS. I am a private citizen with no claim to great technical expertise on the issues involved here, although I have been paying attention to such issues for a number of years. Like most citizens of the US, I am a consumer of electricity and would like to have it available when I need it. I also have enjoyed seeing and photographing wildlife in many locations and backpacking in Wilderness Areas for much of my life. In the last few years, I have twice visited northwestern Colorado specifically to watch greater sage grouse dance on two different leks. Our world would be much poorer without the species with whom we share it.

I118a I believe route WYCO D-1 would be the least environmentally damaging route for both the Gateway South and the Transwest Express power transmission lines. Although most people would agree that power transmission lines are unattractive, having these power lines near roads and other transmission lines seems to have important environmental benefits. The economy of northwest Colorado depends on hunting, fishing, and wildlife viewing. For many of us, this region of the state is especially attractive because of the wealth of wildlife resources. Harming these resources will harm the economy of the region. It likely also would violate laws that protect wildlife, like the National Environmental Policy Act and the International Migratory Bird Treaty.

I118b Remoteness and lack of human impact are important factors in maintaining many native species. Every time humans disturb a previously undisturbed area, invasive species are given an opportunity to do what they do best: invade disturbed areas displacing native species. For this reason, protection of all possible undisturbed or nearly undisturbed areas, such as Wilderness Study Areas, Roadless Areas, and Areas with Wilderness Characteristics, should be avoided by transmission and other projects.

The noise, presence of people, dust, and other factors will cause many species to move from the area chosen for these transmission lines during construction. Of particular concern after construction in open sagebrush areas is that native species there have evolved without tall structures. Bird species that live and nest in open areas, like the rare greater sage grouse and mountain plover, fear nesting and generally being near tall structures. Their primary predators (hawks and eagles) have a great hunting advantage (and the prey birds have a related disadvantage) when the predators perch on such unnatural high places to hunt. Furthermore, the predator birds that use these towers, because they are by far the highest available hunting

Response(s)

I118a Comment and route preference noted. The BLM and USFS have prepared the EIS in response to the applications for right-of-way across the lands they administer per the requirements of NEPA (refer to Section 1.5). Further, the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act also apply, regardless of land jurisdiction or ownership. An analysis of potential effects on wildlife resources is contained in Section 3.2.7.4.3.

I118b See also response to Comment I118a.

Comment(s)

I118 **Nancy Stocker (cont.)**

I118b platforms, are at risk for electrocution. Although power line design changes have reduced electrocutions over the years, some birds continue to be lost in this way.

I118c For the aforementioned reasons, it is essential that:

- All transmission lines go along previously disturbed areas, such as existing transmission lines and roads or brownfields.
- Transmission lines be placed as close to each other and to roads as technically possible, to minimize their impact on native species, both plants and wildlife.
- The Transwest Express project should use the same corridor as the Gateway South line.
- In addition to planning transmission projects, Colorado is making a State Rail Plan. It is possible that this could route another disturbance through northwestern Colorado. Before the FEIS is written, someone should investigate whether this plan has any relationship to the general area in which the transmission projects are planned. If it does, the railroad tracks should also be included in this corridor of disturbance if possible.
- The massiveness of the Gateway South and TransWest Express transmission projects together, possibly with railroad tracks to be added to the rights of way, demands that the total impacts of all projects together be considered in the final EIS's of each of these projects.

A particular advantage of using the routes of existing transmission lines and roads is the ease of access for construction and maintenance, as well as fighting large fires, if they should occur near the transmission lines. Such access needs to be a significant consideration in these dry regions.

I118d It is possible ranches with conservation easements to protect wildlife will be in the path chosen. If this case, the impacts to these ranches should be minimized, as they are also havens for wildlife. Some may have been chosen to safeguard particular species vulnerable to the threat of high structures described above.

Thank you for your attention.

Nancy Stocker
2885 S Gilpin St
Denver, CO 80210
303-759-4056

Response(s)

I118c Comment and route preference noted. In 2013, the Western Electricity Coordinating Council (WECC) revised its guidelines regarding separation distance between high-voltage transmission lines to be a minimum of 250 feet. The alternative routes and route variations for the Project were analyzed in the Draft EIS assuming a greater separation distance of 1,500 feet, based on earlier 2008 WECC guidance. Considering the revised WECC guidance, in early 2014, the BLM asked the Applicant to adjust the transmission line alignment along the agency-preferred alternative route to be approximately 250 feet from existing linear facilities and 300 feet from other proposed transmission line alignments, where applicable. The BLM's intent is to reduce the amount of potential impacts and avoid potential proliferation of transmission lines across the landscape in accordance with the Federal Land Policy and Management Act of 1976. The alternative routes and route variations for the Project are analyzed in the Final EIS assuming a separation distance of 250 to 300 feet.

I118d Potential impacts on conservation easements identified within the 2-mile-wide alternative route study corridor are documented in Section 3.2.15. The management prescriptions of these conservation easements have been considered in the analysis. Where possible, the alternative routes and route variations have been adjusted to avoid direct impacts on these easements. If the alternative route or route variation would impact an easement, selective mitigation measures (e.g., seasonal limitations on construction) have been identified to reduce impacts on the easement.

Comment(s)

Response(s)

I119 **Robert N. Stocker**

2885 S. Gilpin St.
Denver, Colorado 80210
May 21, 2014

Tamara Gertsch, National Project Manager
Energy Gateway South Project
PO Box 21150
Cheyenne, WY 82003

Dear Ms. Gertsch:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Energy Gateway South Project.

I have twice visited Moffat County, Colorado, to view and photograph the early spring courtship rituals of greater sage-grouse. I got out of bed hours before dawn; rode in a chilly, cramped SUV to within walking distance from a lek; plodded quietly through mud and snow carrying a heavy camera, telephoto lens and tripod; and spent several hours in a cold blind hoping that birds would come close enough for me to get a good photograph.

During my visits I stayed on local motels and dined in local restaurants. In a modest way, I helped support the local economy in ways that I would not have if it weren't for greater sage-grouse. On my first visit, the light was horrible and the birds were far away. I didn't get a single photograph worth keeping. This year I got some photos of a cavorting male. One of them is displayed below.

Because I hope to return to Moffat County again and get some photos that show more interaction among the birds, I'd like any new transmission lines to be constructed with as little impact on the natural world as possible.

The DEIS reports that preferred alternatives WYCO-B and WYCO-B-2 would impact 51.9 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat and 51 greater

Comment(s)

I119 **Robert N. Stocker (cont.)**

sage-grouse leks located within 4 miles of centerline. WYCO-D and WYCO-D-1 are reported as impacting 110.3 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat and 79 greater sage-grouse leks located within 4 miles of centerline.

The DEIS concludes, "In Colorado, Alternative WYCO-D and Route Variation WYCO-D-1 would cross substantially more preliminary priority sage-grouse habitat and sage-grouse habitats within 4 miles of leks attended by substantially more sage-grouse than all other WYCO alternative routes and route variations. Alternatives WYCO-B, WYCO-C, and WYCO-F and their route variations all cross similar amounts of preliminary priority sage-grouse habitat and sage-grouse lek attendance at leks within 4 miles of these routes and their route variations are also similar in Colorado." I119a Current condition of impacted habitat should be taken into account. Sage-grouse habitat along the WYCO-D routes has already been disturbed by existing roads and transmission lines. Other routes pass through territory that is still relatively wild. A new transmission line on one of the the WYCO-D routes would do considerably less environmental damage than a new transmission line on one of the other routes.

I119b In addition to disrupting more sage-grouse habitat, routes other than WYCO-D and WYCO-D-1 would diminish the wild character of backcountry and disturb wildlife habitat in relatively remote areas. The WYCO-D routes, which follow existing roadways instead of going cross-country, would have less impact on land with wilderness characteristics – a major factor in their favor.

Additional length of the WYCO-D routes may add expense to both construction and operation. To some extent this expense would be balanced by the advantages of being able to access the transmission line from existing roadways.

The WYCO-D-1 alternative is preferable to the WYCO-D route because it runs closer to an existing transmission line and would, therefore, be less damaging to the environment.

I119c Finally, whatever route is selected, I hope every effort is made to minimize detrimental effects to wildlife and the natural environment:

- Gateway South and TransWest Express transmission lines should be collocated.
- The combined impact of the Gateway South and TransWest Express projects should be considered before either project is approved.
- Raptors on high perches have unnatural advantages over prey like sage-grouse accustomed to living in an open habitat with only low-lying vegetation. Transmission towers should be modified to discourage raptors from perching on them.
- Provisions should be made to prevent birds of all kinds from being killed by electrocution or collisions with guy wires or other elements associated with transmission lines.
- Construction should be scheduled to minimize interference with nesting birds.

Thank you for considering my comments.

Sincerely yours,

Robert N Stocker

Robert N. Stocker

Response(s)

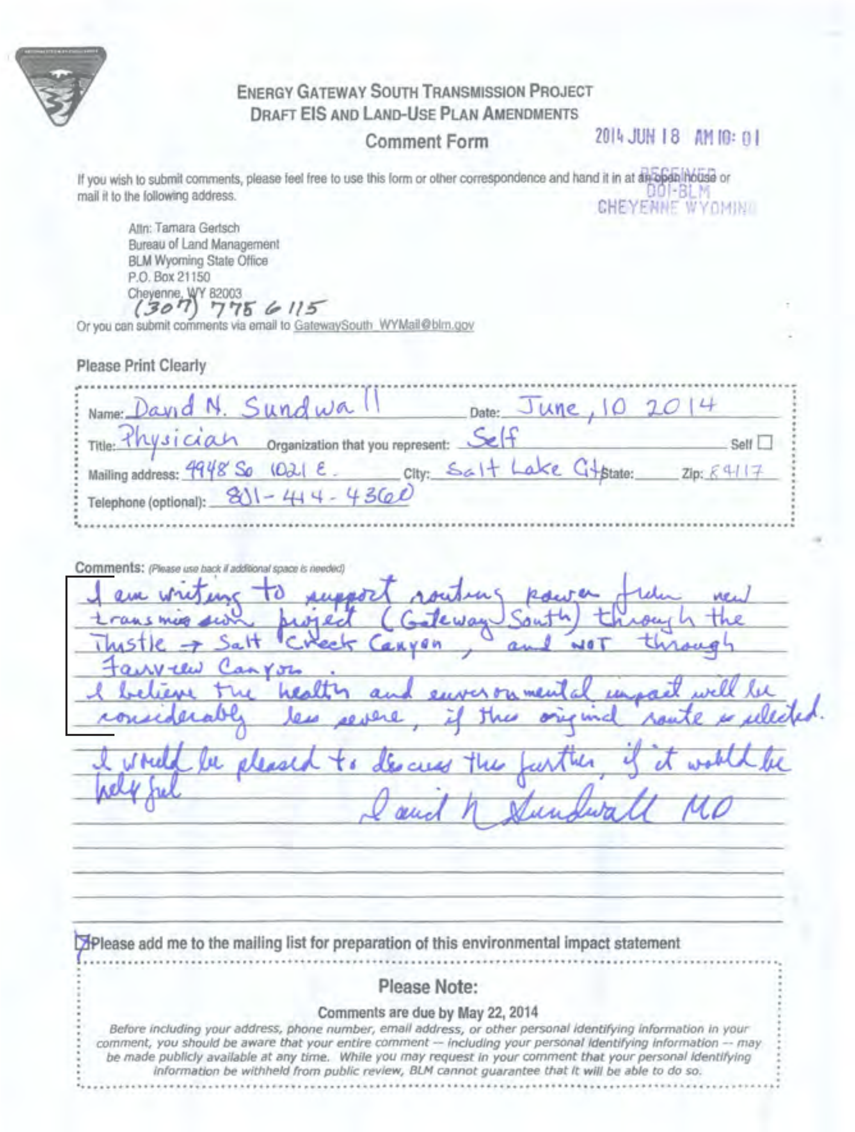
I119a The condition of sage-grouse habitats crossed by WYCO-D in this area is addressed in Section 3.2.8.5.4. The route variation in this area is addressed in Appendix F.

I119b Comment and route preference noted.

I119c Comment and route preference noted. The Applicant has worked with the FWS, Avian Power Line Interaction Committee, and other agencies to develop an Avian Protection Plan for their facilities and distribution and transmission lines in their service territory. The Avian Protection Plan and Avian Power Line Interaction Committee guidelines for protection and collisions are referenced at a high-level in the EIS. Project-specific standards, methods, and measures (including avian-specific mitigation) will be described in the POD to be developed in coordination with cooperating agencies.

Comment(s)

I120 **David N. Sundwall**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

2014 JUN 18 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003
(307) 775 6115

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: David N. Sundwall Date: June, 10 2014
Title: Physician Organization that you represent: Self Self ☐
Mailing address: 4948 So 1021 E. City: Salt Lake City State: Zip: 84117
Telephone (optional): 801-444-4360

Comments: *(Please use back if additional space is needed)*

I120a I am writing to support routing power from new transmission project (Gateway South) through the Thistle → Salt Creek Canyon, and NOT through Fairview Canyon.
I believe the health and environmental impact will be considerably less severe, if the original route is selected.

I would be pleased to discuss this further, if it would be helpful

David N Sundwall MD

☑ Please add me to the mailing list for preparation of this environmental impact statement

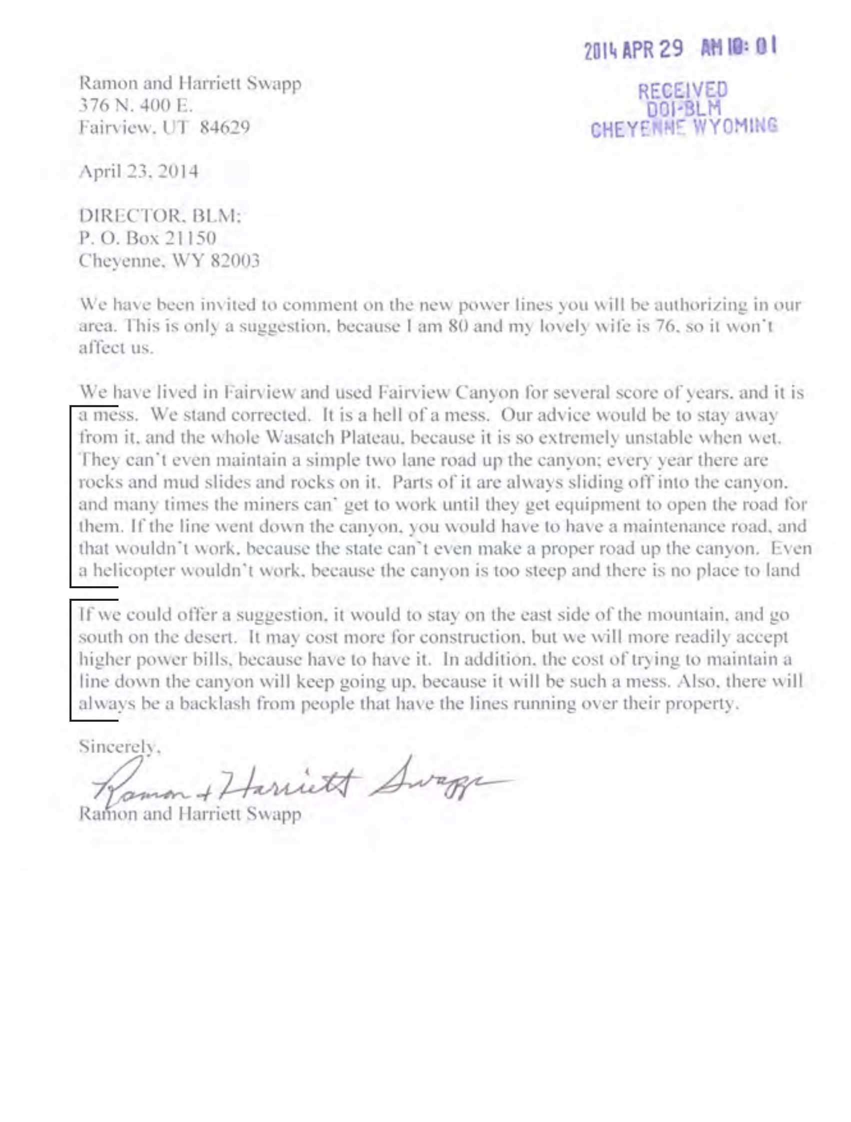
Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I120a Comment and route preference noted.

Comment(s)

I121 **Ramon and Harriett Swapp**



2014 APR 29 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Ramon and Harriett Swapp
376 N. 400 E.
Fairview, UT 84629

April 23, 2014

DIRECTOR, BLM;
P. O. Box 21150
Cheyenne, WY 82003

We have been invited to comment on the new power lines you will be authorizing in our area. This is only a suggestion, because I am 80 and my lovely wife is 76, so it won't affect us.

We have lived in Fairview and used Fairview Canyon for several score of years, and it is
I121a a mess. We stand corrected. It is a hell of a mess. Our advice would be to stay away from it, and the whole Wasatch Plateau, because it is so extremely unstable when wet. They can't even maintain a simple two lane road up the canyon; every year there are rocks and mud slides and rocks on it. Parts of it are always sliding off into the canyon, and many times the miners can' get to work until they get equipment to open the road for them. If the line went down the canyon, you would have to have a maintenance road, and that wouldn't work, because the state can't even make a proper road up the canyon. Even a helicopter wouldn't work, because the canyon is too steep and there is no place to land

I121b If we could offer a suggestion, it would to stay on the east side of the mountain, and go south on the desert. It may cost more for construction, but we will more readily accept higher power bills, because have to have it. In addition, the cost of trying to maintain a line down the canyon will keep going up, because it will be such a mess. Also, there will always be a backlash from people that have the lines running over their property.

Sincerely,

Ramon + Harriett Swapp

Ramon and Harriett Swapp

Response(s)

I121a It is possible construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5.

Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATV), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners, through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

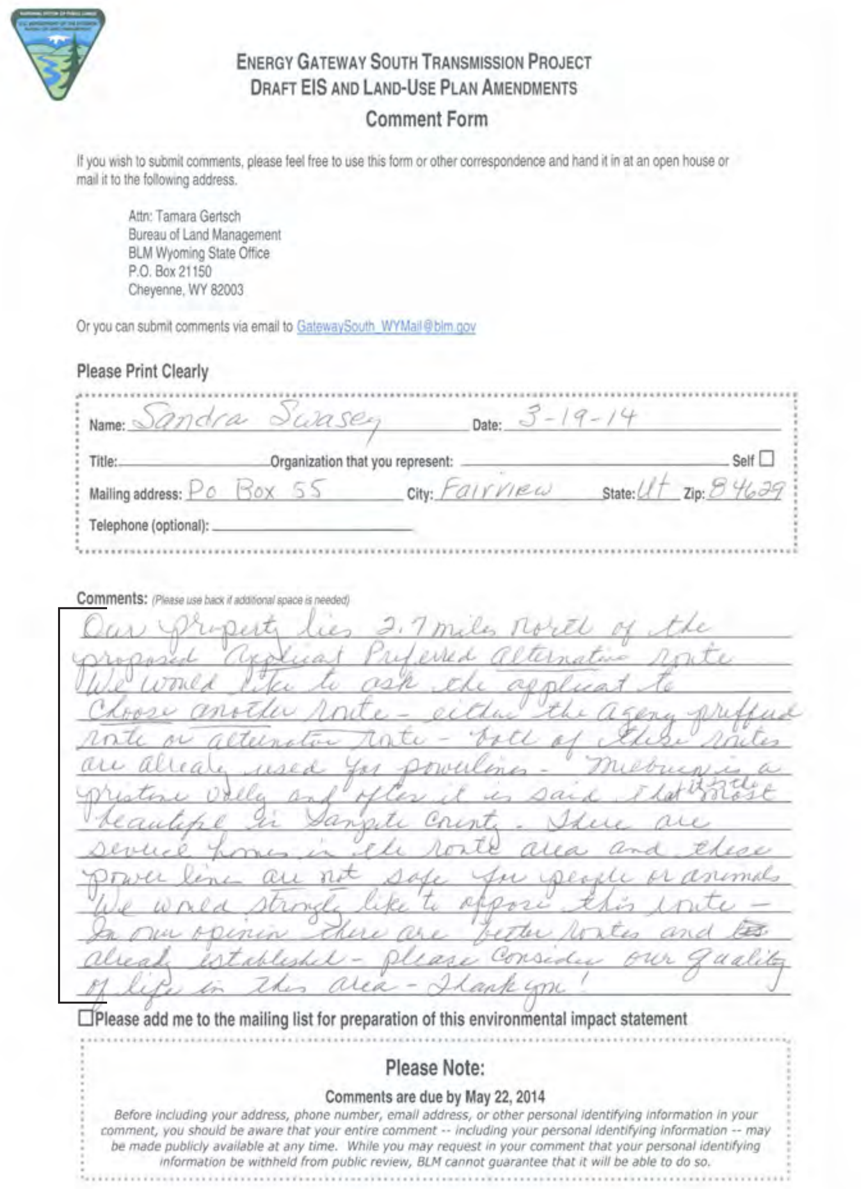
Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 for a comprehensive list of the design features that will be used for the entire Project and the selective mitigation measures that will be used in specific areas along the Project.

I121b Comment and route preference noted.

Comment(s)

Response(s)

I122 **Sandra Swasey**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Sandra Swasey Date: 3-19-14
Title: Organization that you represent: Self ☐
Mailing address: Po Box 55 City: Fairview State: Ut Zip: 84629
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I122a

Our Property lies 2.7 miles North of the proposed Applicant Preferred Alternative route We would like to ask the applicant to Choose another route - either the agency preffered route or alternative route - both of these routes are already used for powerlines - Milburn is a pristine Valley and often it is said that it's the most beautiful in Sanpete County. There are several homes in the route area and these power lines are not safe for people or animals We would strongly like to oppose this route - In our opinion there are better routes and already established - please Consider our quality of life in this area - Thank you!

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I122a Comment and route preference noted.

Comment(s)

I123 Vernon and Sandra Swasey

From: **Sandra Swasey** <ssswasey@gmail.com>
Date: Tue, Apr 22, 2014 at 2:57 PM
Subject: Transmission Project
To: GatewaySouth_WYMail@blm.gov

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
PO Box 21150
Cheyenne WY 82003

I have emailed you before regarding the **Energy Gateway South Transmission Project** in the Fairview UT area. We have been opposed to the Applicant Preferred route for the past several years. Finally, at the March meeting held in Mt. Pleasant Ut, we were able to determine the 2-mile easement route request in relation to our home. As you are aware, the preferred route requested by RMP comes from Helper, crosses through Gooseberry, the Narrows Tunnel and straight down the top of the mountain on the north side of Highway 31 (Fairview Canyon), over both National Forest and private properties. It then cuts through Oakcreek north of Fairview, crosses The Wild Life Management Area and Highway 89, then continues west to hook up with the power grid. In addition, the **Transwest Express Transmission Line Project** intends to team up with RMP by sharing this route. I have also heard since that there is a third project the **Zephyr Power Transmission Project** also interested in this corridor.

I123a

This route area through Fairview Canyon (Highway 31) is designated a *National Scenic Byway*. Highway 89 has been designated a *Pioneer Heritage* area. In addition, the environmental, economic, including tourism, in this area will be impacted, plus, what about health issues and land value of the local population.

We recognize the need for increased electrical power but feel there are better alternatives that will not impact this area of northern Sanpete county.

Therefore, we wish to support the Agency Preferred Alternative approved by the BLM. This route along Highway 6 from Helper to Thistle and over the mountain to Nephi can mitigate the impact on our area.

Thank you for accepting this letter of support for the BLM Preferred Route--

Vernon and Sandra Swasey
PO Box 55
Fairview UT 84629

cc: Juan Palma, Director
BLM Utah State Office
440 West 200 South, Suite 500
Salt Lake City UT 84101

Response(s)

I123a

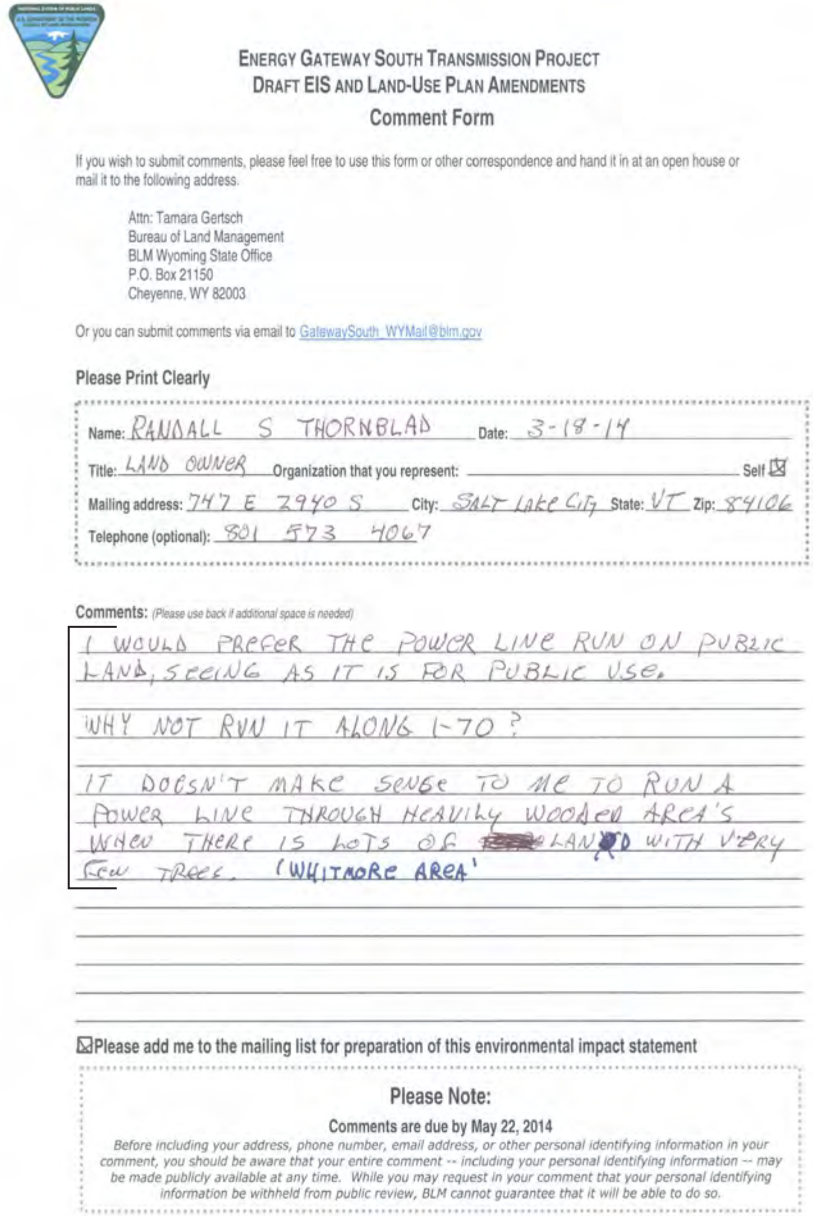
Comment and route preference noted. Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers. In regard to the views from the Energy Loop Scenic Byway in Fairview Canyon, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based on these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

As described in the Impacts to Property Values section of Section 3.2.22, property values can be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. There are 10 residences north of Fairview, Utah, located within 0.25 mile of Alternatives COUT-H and COUT BAX-E, which are likely to be affected by the proximity of the transmission line.

Comment(s)

Response(s)

I124 | **Randall S. Thornbald**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: RANDALL S THORNBLAD Date: 3-18-14
Title: LAND OWNER Organization that you represent: Self ☒
Mailing address: 747 E 2940 S City: SALT Lake City State: VT Zip: 84106
Telephone (optional): 801 573 4067

Comments: *(Please use back if additional space is needed)*

I124a

I WOULD PREFER THE POWER LINE RUN ON PUBLIC LAND, SEEING AS IT IS FOR PUBLIC USE.

WHY NOT RUN IT ALONG I-70?

IT DOESN'T MAKE SENSE TO ME TO RUN A POWER LINE THROUGH HEAVILY WOODED AREA'S WHEN THERE IS LOTS OF ~~[illegible]~~ LAND WITH VERY FEW TREES. (WHITMORE AREA'

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

I124a Comment and route preference noted.

Comment(s)

Response(s)

I125 **Randy Thornbald**

From: **Randy Thornblad** <rsthome@msn.com>
Date: Sun, May 18, 2014 at 7:10 PM
Subject: Gateway South Transmission Line Project
To: blm_ut_so_public_room@blm.gov

I125a Just wanted to make a comment about the blm position on the Gateway South Transmission Line Project. I find it interesting that the government does an environmental study on the blm land where Rocky Mountain Power wants to run power lines and determines there are endangered birds there so no power line can be put on this land. Now this is power for public use but the lines can't be put on public land.
So the Power company and the government have decided to run the lines over private property thereby destroying many acres of land owned by private individuals like myself.

It seems wrong to me that private property owners are forced to sacrifice their land for the public good, yet public land goes untouched.

I believe public land should be used for the public good and private lands should be a last resort.

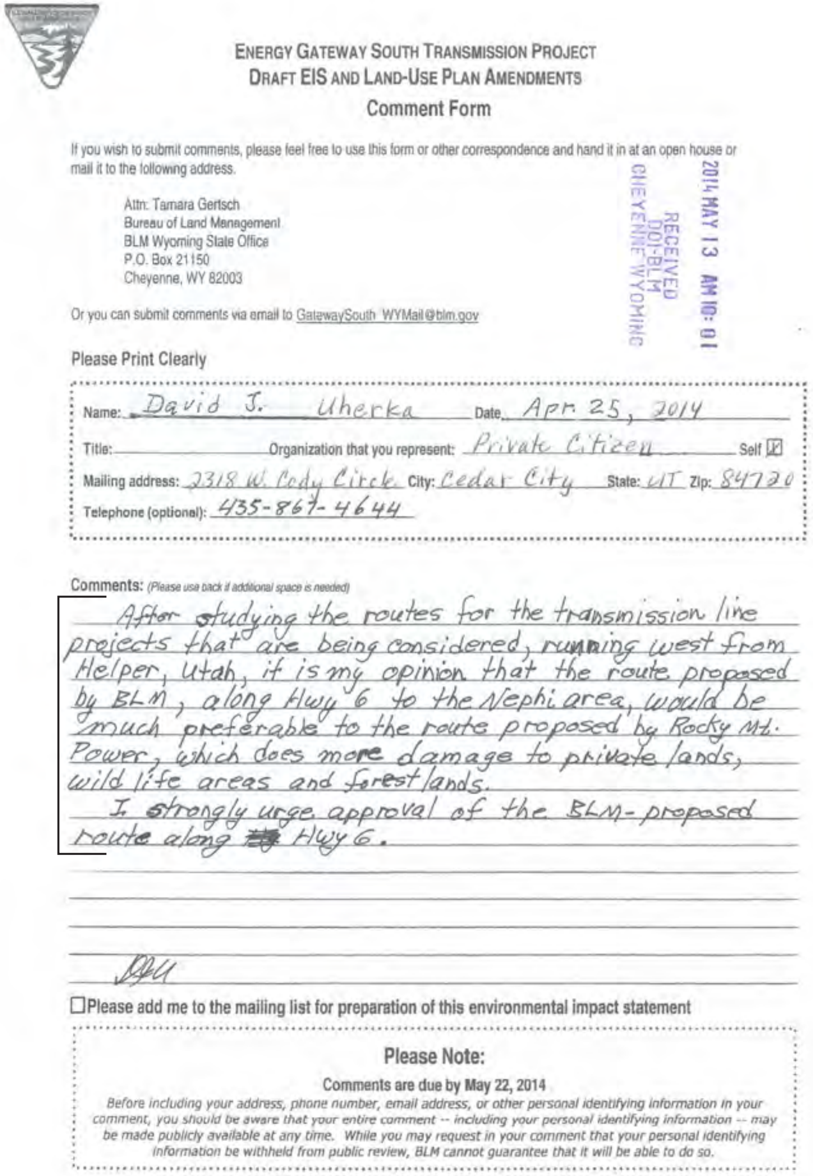
Regards

Randy Thornblad
rsthome@msn.com

I125a Comment and route preference noted. The first two criteria considered by the Applicant when identifying preliminary alternative routes during their initial feasibility studies conducted by the Applicant included (1) presence of designated or proposed utility corridors and (2) presence of other existing linear facilities. During their review of the alternative routes, the BLM and USFS have endeavored to maintain the use of federally designated utility corridors and the use of federal lands to the extent possible (i.e., where suitable when reviewing for environmental, geographic, or engineering/electric system reliability concerns). However, federal land is not contiguous. Ultimately, the BLM and USFS selection of the preferred alternative must be based on resource sensitivities and resource issues.

Comment(s)

I126 **David J. Uherka**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 MAY 13 AM 10: 01

Please Print Clearly

Name: David J. Uherka Date: Apr 25, 2014
Title: Organization that you represent: Private Citizen Self ☑
Mailing address: 2318 W. Cody Circle City: Cedar City State: UT Zip: 84720
Telephone (optional): 435-867-4644

Comments: *(Please use back if additional space is needed)*

I126a After studying the routes for the transmission line projects that are being considered, running west from Helper, Utah, if is my opinion that the route proposed by BLM, along Hwy 6 to the Nephi area, would be much preferable to the route proposed by Rocky Mt. Power, which does more damage to private lands, wild life areas and forest lands.

I strongly urge approval of the BLM-proposed route along Hwy 6.

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

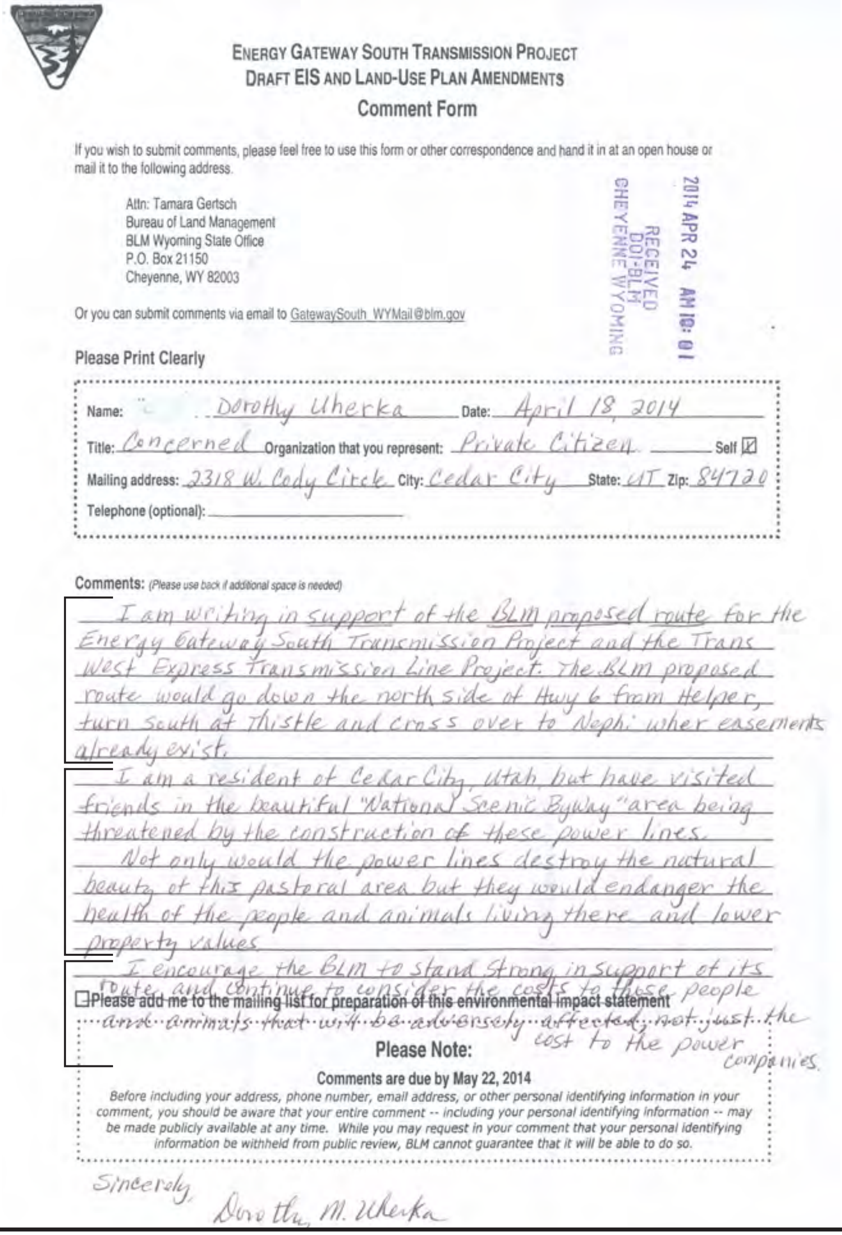
Response(s)

I126a Comment and route preference noted.

Comment(s)

Response(s)

I127 **Dorothy Uherka**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

RECEIVED
DOI-BLM
CHEYENNE WYOMING
2014 APR 24 AM 10:01

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

Please Print Clearly

Name: Dorothy Uherka Date: April 18, 2014
Title: Concerned Organization that you represent: Private Citizen Self ☑
Mailing address: 2318 W. Cody Circle City: Cedar City State: UT Zip: 84720
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

I127a I am writing in support of the BLM proposed route for the Energy Gateway South Transmission Project and the Trans West Express Transmission Line Project. The BLM proposed route would go down the north side of Hwy 6 from Helper, turn south at Thistle and cross over to Nephi wher easements already exist.

I127b I am a resident of Cedar City, Utah but have visited friends in the beautiful "National Scenic Byway" area being threatened by the construction of these power lines.

Not only would the power lines destroy the natural beauty of this pastoral area but they would endanger the health of the people and animals living there and lower property values

I127c I encourage the BLM to stand strong in support of its route and continue to consider the costs to those people and animals that will be adversely affected, not just the cost to the power companies.

☐ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:

Comments are due by May 22, 2014

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Sincerely,
Dorothy M. Uherka

I127a Comment and route preference noted.

I127b Due to the sensitivity of views from this and other scenic byways, all of these roads were included in the assessment of high concern viewers along with all residences. In regard to the views from the Energy Loop Scenic Byway both in Fairview Canyon and atop the Wasatch Plateau, which are largely intact with few visible modifications, the Project would result in a high level of visual impacts. Based upon these impacts, and other resource effects, this alternative route was not selected as the Agency Preferred Alternative.

As described in the Impacts to Property Values section of Section 3.2.22, property values can certainly be affected by transmission lines, depending on the proximity of the transmission line to structures, the surrounding topography, and the existence of landscaping and other vegetation. There are 10 residences north of Fairview, Utah, located within 0.25 mile of the alternatives routes and route variations likely to be affected by the proximity of the transmission line. These alternative routes and route variations were not selected as the Agency Preferred Alternative.

I127c Comment and route preference noted.

Comment(s)

I128 **Pamela Underwood**

---------- Forwarded message ----------
From: **Pamela Underwood** <pamelak1@hotmail.com>
Date: Thu, Mar 20, 2014 at 9:16 AM
Subject: Energy Gateway South Transmission Line Project
To: "GatewaySouth_WYMail@blm.gov" <gatewaysouth_wymail@blm.gov>

To Whom it may concern,

I know this is just a waste of my time as you are the BLM and do as you please with no regard to what "we the people want". Another fine example of our Federal Government.

I128a I would really like a up front answer to why you are NOT going with Pacific Corp preferred route and instead want to go through our property in Argyle canyon? You will shut down roads and close gates to keep people out so the wildlife can migrate yet you have no problem cutting down trees, disturbing wildlife and destroying property when it comes to private land. Please explain that to me.

This property has been in my family for over 30 years, my Dad built that cabin by hand so future generations could enjoy it. Why do you want to take away the one thing that keeps my Father's memory alive? Let me take away something you cherish that belonged to your deceased loved one and see how you feel.

Thank you for your time, you can now send this to the trash folder as we all know its where it will end up anyway.

Pamela Underwood

Response(s)

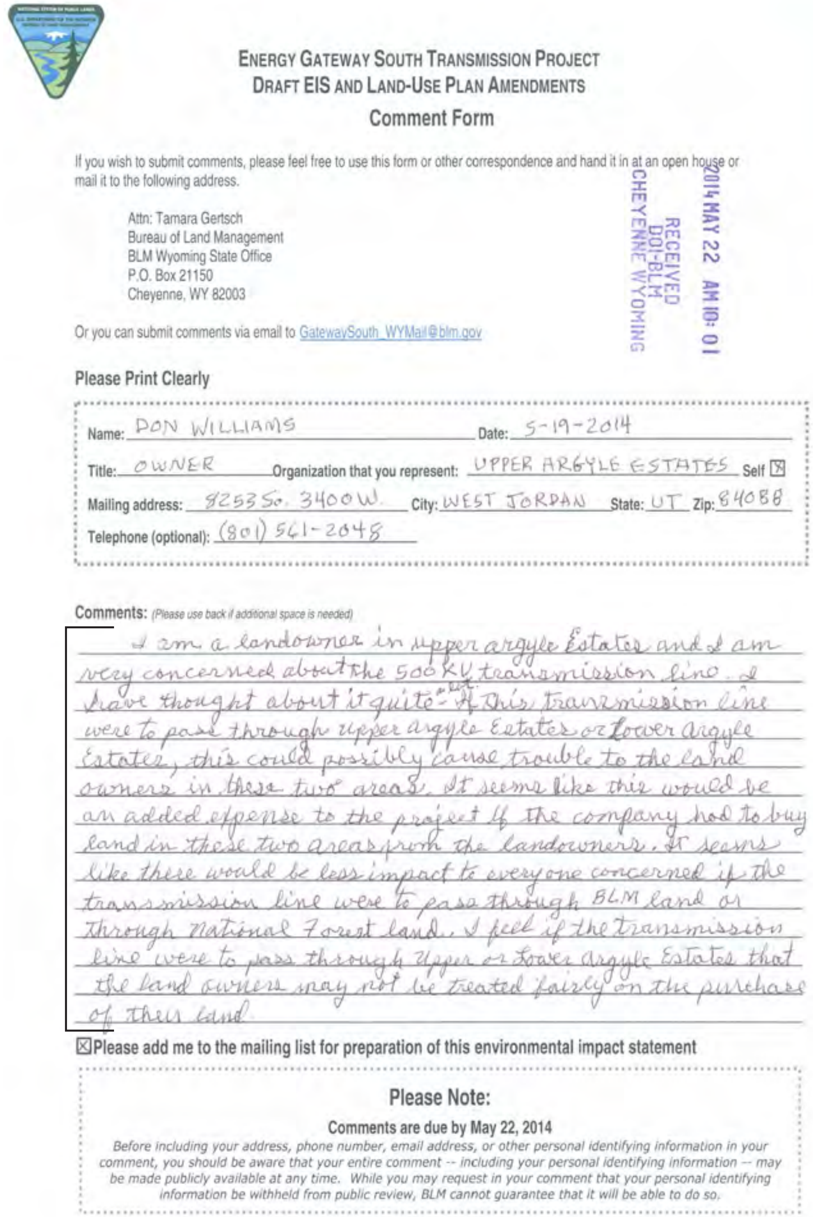
I128a Comment and route preference noted. Based on comments received during public review of the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed in the Final EIS and are addressed in Appendix F.

New rights-of-way for the construction and maintenance of the new transmission line would be required for the Project. Existing access roads would be used where possible, but additional access road easements would also need to be acquired. The Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. The Applicant would also compensate landowners for any lost agricultural values.

The appraisals may reference studies conducted on similar properties to support their conclusions. The strength of any appraisal depends on the individual analysis of the property, using neighborhood-specific market data to determine market value. The easements required may encumber the right-of-way area with land-use limitations. Each transmission line easement will specify the present and future right to clear the right-of-way and to keep it clear of all trees, whether natural or cultivated, and all structure-supported crops, other structures, trees, brush, vegetation, fire and electrical hazards.

Comment(s)

I129 **Don Williams**



ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
DRAFT EIS AND LAND-USE PLAN AMENDMENTS
Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at an open house or mail it to the following address.

Attn: Tamara Gertsch
Bureau of Land Management
BLM Wyoming State Office
P.O. Box 21150
Cheyenne, WY 82003

Or you can submit comments via email to GatewaySouth_WYMail@blm.gov

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Please Print Clearly

Name: DON WILLIAMS Date: 5-19-2014
Title: OWNER Organization that you represent: UPPER ARGYLE ESTATES Self ☒
Mailing address: 8253 So. 3400 W. City: WEST JORDAN State: UT Zip: 84088
Telephone (optional): (801) 561-2048

Comments: *(Please use back if additional space is needed)*

I129a I am a landowner in upper argyle Estates and I am very concerned about the 500 KV transmission line. I have thought about it quite a bit. If this transmission line were to pass through upper argyle Estates or Lower argyle Estates, this could possibly cause trouble to the land owners in these two areas. It seems like this would be an added expense to the project if the company had to buy land in these two areas from the landowners. It seems like there would be less impact to everyone concerned if the transmission line were to pass through BLM land or through National Forest land. I feel if the transmission line were to pass through Upper or Lower argyle Estates that the land owners may not be treated fairly on the purchase of their land

☒ Please add me to the mailing list for preparation of this environmental impact statement

Please Note:
Comments are due by May 22, 2014
Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you may request in your comment that your personal identifying information be withheld from public review, BLM cannot guarantee that it will be able to do so.

Response(s)

I129a Comment and route preference noted. New rights-of-way for the construction and maintenance of the new transmission line would be required for the Project. Existing access roads would be used where possible, but additional access road easements would also need to be acquired. The Applicant would pay market value to nonfederal landowners, as established through the appraisal process, for any new land rights required for this Project. The appraisal process takes all factors affecting value into consideration, including the impact of transmission lines on property value. The Applicant would also compensate landowners for any lost agricultural values.

The appraisals may reference studies conducted on similar properties to support their conclusions. The strength of any appraisal depends on the individual analysis of the property, using neighborhood-specific market data to determine market value. The easements required may encumber the right-of-way area with land-use limitations. Each transmission line easement will specify the present and future right to clear the right-of-way and to keep it clear of all trees, whether natural or cultivated, and all structure-supported crops, other structures, trees, brush, vegetation, fire and electrical hazards.

Comment(s)

Response(s)

I130 **Travis Winder**

On Thu, Aug 22, 2013 at 12:55 PM, Travis Winder <travisnganeil@aol.com> wrote:

I130a As a landowner on the ridge I am apposed to this in many ways but one of the main reasons is that there is only a limited amount of flat / useable property on these lots. I have 100 acres total but only 10% - 15% of it is actual flat ground that you can camp with RV's and use for recreation and this is all on top next to the road where you are wanting to bring the power through. If we lose 500 feet of our property to an easement / right of way for (2) power lines the ground will be useless to us, we would be off the edge of the property and it is steep enough that you could not pull a trailer off the hill or worse get it back out. I have attached a satellite view that shows the power line running right over my 5th wheel and directly through the center of our fire pit and camp. I am just trying to convey the impact of this from a landowners point of view, we have invested a lot of time and money into our retirement property and would hate to see this happen to it. If the line is moved to the South in the Emma Park area this area is already industrialized with the oil wells, gravel pits etc. people are not down there camping and using this area for recreational activities like we do on the top so I think it would be a lot less impact for them. Please take this into account while you are making the decisions on where to run the lines. If you would like I am more than willing to meet you up there at any time, take you on to my property and show you this personally. I can also show you some of the other areas that I believe would be affected from this route.

Thank you for your time,

Travis Winder
Pleasant Grove, Utah

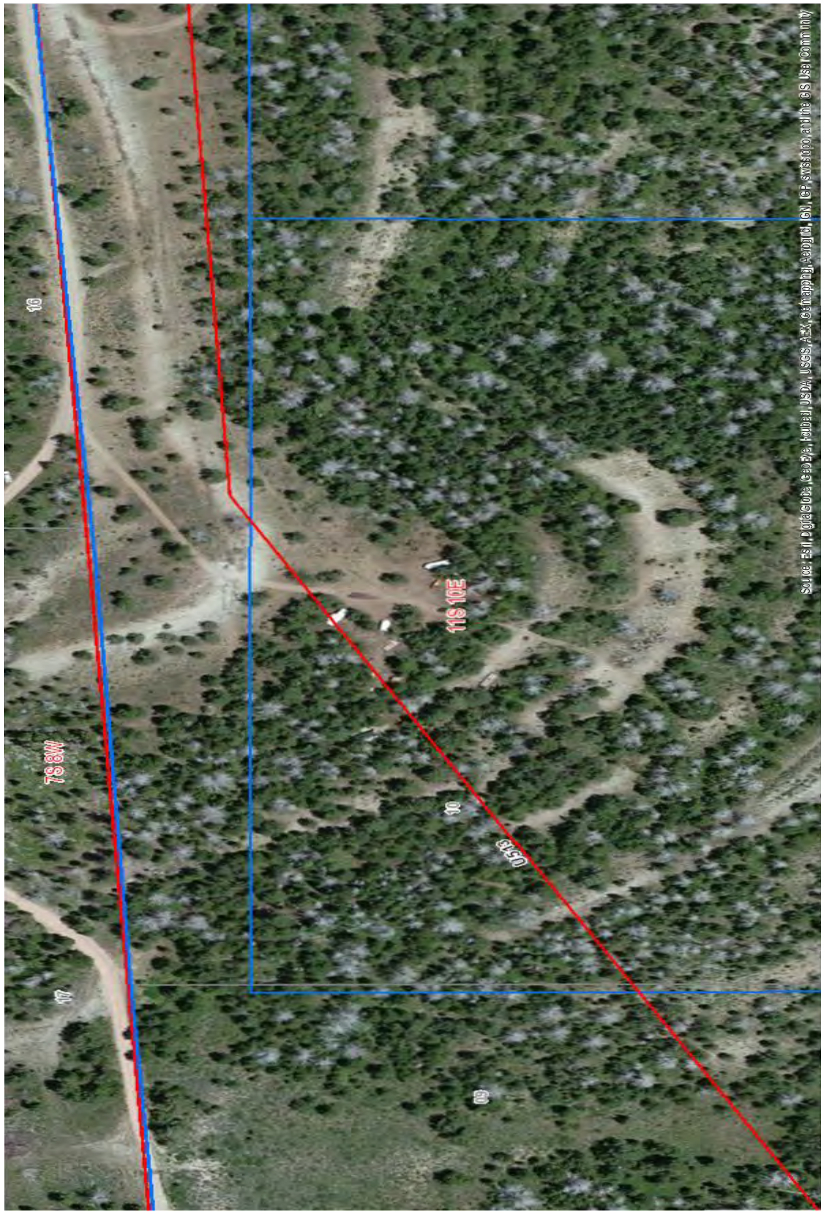
I130a Comment and route preference noted. Based on comments received during public review of the Draft EIS, the Applicant identified alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed in the Final EIS and are addressed in Appendix F.

Comment(s)

Response(s)

I130

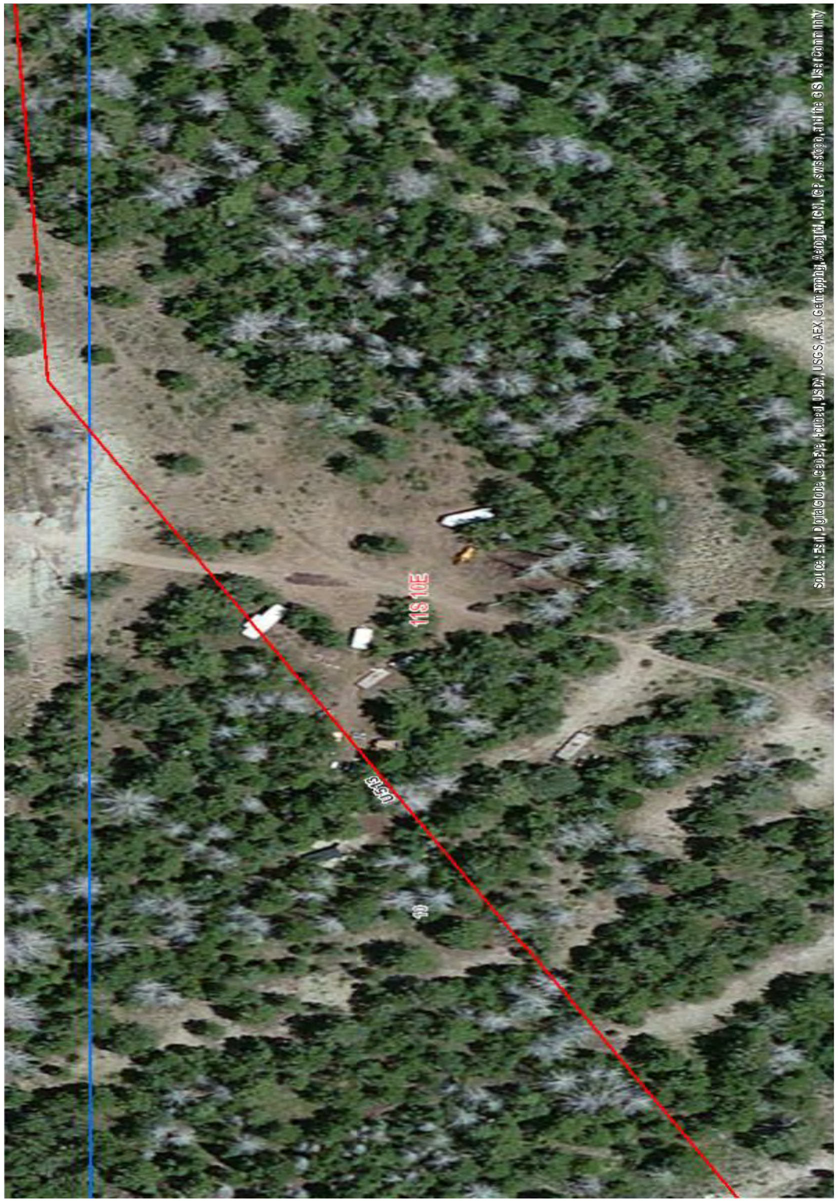
Travis Winder (cont.)



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Comment(s)	Response(s)

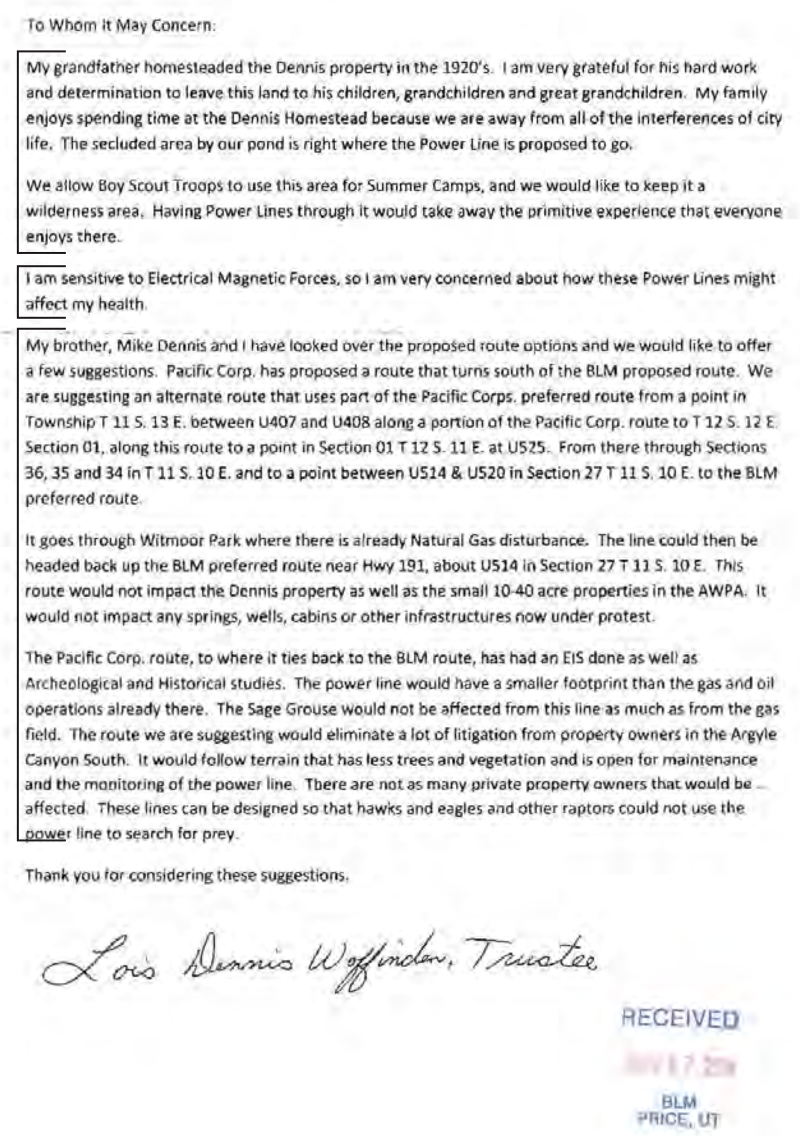
I130	Travis Winder (cont.)



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Comment(s)

I131 **Lois Dennis Woffinden, Trustee**



To Whom it May Concern:

I131a My grandfather homesteaded the Dennis property in the 1920's. I am very grateful for his hard work and determination to leave this land to his children, grandchildren and great grandchildren. My family enjoys spending time at the Dennis Homestead because we are away from all of the interferences of city life. The secluded area by our pond is right where the Power Line is proposed to go.

We allow Boy Scout Troops to use this area for Summer Camps, and we would like to keep it a wilderness area. Having Power Lines through it would take away the primitive experience that everyone enjoys there.

I131b I am sensitive to Electrical Magnetic Forces, so I am very concerned about how these Power Lines might affect my health.

I131c My brother, Mike Dennis and I have looked over the proposed route options and we would like to offer a few suggestions. Pacific Corp. has proposed a route that turns south of the BLM proposed route. We are suggesting an alternate route that uses part of the Pacific Corps. preferred route from a point in Township T 11 S. 13 E. between U407 and U408 along a portion of the Pacific Corp. route to T 12 S. 12 E. Section 01, along this route to a point in Section 01 T 12 S. 11 E. at U525. From there through Sections 36, 35 and 34 in T 11 S. 10 E. and to a point between U514 & U520 in Section 27 T 11 S. 10 E. to the BLM preferred route.

It goes through Witmoor Park where there is already Natural Gas disturbance. The line could then be headed back up the BLM preferred route near Hwy 191, about U514 in Section 27 T 11 S. 10 E. This route would not impact the Dennis property as well as the small 10-40 acre properties in the AWPA. It would not impact any springs, wells, cabins or other infrastructures now under protest.

The Pacific Corp. route, to where it ties back to the BLM route, has had an EIS done as well as Archeological and Historical studies. The power line would have a smaller footprint than the gas and oil operations already there. The Sage Grouse would not be affected from this line as much as from the gas field. The route we are suggesting would eliminate a lot of litigation from property owners in the Argyle Canyon South. It would follow terrain that has less trees and vegetation and is open for maintenance and the monitoring of the power line. There are not as many private property owners that would be affected. These lines can be designed so that hawks and eagles and other raptors could not use the power line to search for prey.

Thank you for considering these suggestions.

Lois Dennis Woffinden, Trustee

RECEIVED
[illegible]
BLM
PRICE, UT

Response(s)

I131a Comment and route preference noted.

I131b The Applicant is aware of concerns regarding possible health risks from EMF; however, no adverse health effects of EMF are conclusively or consistently identified by scientists. As identified in design features of the Proposed Action (Table 2-8, Design Feature 11), the Applicant would continue to follow studies performed on EMF research. The Applicant relies on the findings and conclusions of public health specialists and international scientific organizations, such as the WHO and the ICNIRP, for guidance and guidelines regarding EMF. EMF is discussed in greater detail in Section 3.2.23.

There are also concerns about potential sensitivity to EMF, a condition frequently called EHS. According to the WHO's Fact Sheet on EHS, a number of research studies "indicate that EHS individuals cannot detect EMF" and in scientific studies EHS individuals' "symptoms were not correlated with EMF exposure." While the Fact Sheet recognizes that the symptoms of EHS individuals may be real, they are likely unrelated to EMF.

I131c Comment and route preference noted. Based on comments received during public review of the Draft EIS, the Applicant coordinated with some representatives of the Argyle Wilderness Protection Corporation to identify alternative route refinements and variations in this area that would avoid or reduce potential impacts on existing and planned land uses in the area (e.g., seasonal-use homes) and sensitive environmental resources. These route variations have been analyzed in the Final EIS and are addressed in Appendix F.

Comment(s)

I132 **Max G. Worthington**

---------- Forwarded message ----------
From: **Max Worthington** <max@wa7x.com>
Date: Wed, Mar 19, 2014 at 3:15 PM
Subject: Energy Gateway South Transmission Project
To: GatewaySouth_WYMail@blm.gov

As a citizen who has recreational property near two of the alternate proposed routes of the Energy Gateway South Transmission Project, that I would likely see the lines from. I am impressed with the concerns and study efforts you have put into this vital need. I am not in the energy industry nor do I have any vested interest in any power companies. I just understand how vital power is to our existence and know that you probably receive many opposing this project due to reasons of just not wanting it.

I132a I hope the project is not delayed from the many years spent getting to this point and hope that while not everyone will be satisfied, it is in the public's best interests. The existing lines have quite a positive track record for safety and once installed tend to blend in with the real world. I find it frustrating that many of the opposing tend to vilify and focus on elements like bury the line, etc. that just are not practical or economical along with the high likelihood of failures.

Please take my comments as support for your efforts to provide for our mutual future.

Thanks!

M.G. Worthington
Salt Lake City, UT

Response(s)

I132a Comment noted.

Comment(s)

Response(s)

I133 **Robert and Sandy Wright**

On Wed, Apr 9, 2014 at 9:14 AM, Robert Wright <Robert.Wright@snow.edu> wrote:

The information below and the attached has the public comments made by Sandy and Robert Wright relating to the Energy Gateway South Transmission Project. The attached is a copy of the signed document. I will mail the hard copy if it is needed so please let me know. If I do not hear back from someone in a few days, I will mail it to the address listed below. Thanks for allowing our concerns and comments to be heard.

Energy Gateway South Transmission Project

Draft EIS and Land-Use Plan Amendments

Comment Form

Attn: Tamara Gertsch

Bureau of Land
management

BLM Wyoming State Officer

P O Box 21150

Cheyenne, WY 82003

GatewaySouth_WYMail@blm.gov

Name: Robert & Sandy Wright Date: April 10, 2014

Title: Organization that you represent: Private land owner / Self

Mailing Address: P O Box 497 City: Fairview State: Utah Zip: 84629

Comment(s)

I133 **Robert and Sandy Wright (cont.)**

Telephone Number: 435-427-9492

Comments:

We live just south of the Rocky Mountain Power Preferred route, which is about 3 tens of a mile from this Rocky Mountain Power preferred route and about 1 ½ miles North of the Fairview Canyon Road and crosses Milburn Road. We have some concerns that we would like to address to the decision makers of this Power line route.

I133a * First a question, why is Rocky Mountain Power proposing this alternative route instead supporting the BLM/U S Forest Services Preferred Route? We have not been able to understand this decision unless it is tied to money or potential cost?

- The BLM/US Forest Service preferred route which runs near US 6 to Thistle and then to Salt Creek Canyon has less impact on property owners and residents. We believe that the BLM/Forest Service has taken into consideration all factors relating to their (BLM) preferred route which we believe has a much less impact to the National Forest lands, private property and the environment.

- The route preferred by the applicant Rocky Mountain Power which runs west from Carbon Count into Sanpete County on to Juab County creates some concerns from our perspective. It brings a power line through the north Skyline mountain area also known as the Wasatch Plateau into the mountain valleys in Sanpete County and then onto Salt Creek Canyon. Our concerns with the Rocky Mountain Power proposed route:

I133b * The applicant's route crosses a portion of the Gooseberry Narrows Projects with the adjacent recreation areas. This would create both visual pollution and environmental damage.

I133c * The applicant's route then move down Fairview Canyon area where it is very rugged and steep thus any construction to erect and support power poles would have a major impact to the soil, public access, etc.

I133d * Once roads are placed over the mountain, this would #1- negative effect access to these areas by ATV riders and #2- has a negative impact on the grazing rights for stockman and #3- would have a major visual impact on the beauty of Skyline Drive and Fairview Canyon.

Response(s)

I133a Comment and route preference noted. The Applicant's rationale for selecting the Applicant's Preferred Alternative is described in Section 2.7.2.

I133b The Narrows Project is considered a past or present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.11, and the Narrows Project recreation area is discussed in Section 3.2.12.

I133c Comment and route preference noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

I133d Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATVs), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 of the Final EIS for a comprehensive list of the design features (Table 2-8) that will be used for the entire Project and the selective mitigation measures (Table 2-13) that will be used in specific areas along the Project.

Impacts on recreation resources, including ATV riders are discussed in Section 3.2.12. Impacts on grazing allotments are discussed in Section 3.2.11 and Appendix L. Impacts on visual resources are discussed in Section 3.2.18.

Comment(s)

I133 **Robert and Sandy Wright (cont.)**

I133e

* Once the applicant's route drops into the Oak Creek / Milburn Valley just north of Fairview, its impact would greatly affect the wildlife in the valley.

* Utah Division of Nature Resources has an easement close to the Sanpitch River to protect the spotted frogs. Additionally, this power line would cross wet lands close to the Sanpitch River.

* The area where the applicant's route has many irrigation ponds where the Canadian Geese come to nest and raise their young each year.

* This area is also the winter grounds for large animals like elk and deer which would be negatively impacted by these power lines.

I133f

* Applicant's route would create visual pollution to the Sanpete Valleys for miles. Just this fact alone would cause property values in the area to decrease, and it would harm property owner's rights to the point where potential litigation would be possible.

Robert Wright & Sandy Wright would support the BLM/U S Forest Service preferred route. We believe that the BLM & Forest Service has properly evaluated the impact of this line on the environment and those that are affected by this project and has developed the route that would have the least impact on the citizen, the land owners and the environment.

Robert Wright Sandy Wright

Response(s)

I133e

Additional information regarding two conservation agreements for Columbia spotted frog located near the Sanpitch River (the Nuttall Farms and Crawford Farms conservation easements) have been incorporated into Sections 3.2.10.4 and 3.2.15) and Appendix E of the Final EIS. Preconstruction surveys would be conducted for sensitive species to identify locations where relevant selective mitigation measures and design features would be applied.

Impacts on migratory birds are discussed in Section 3.2.9 and would also be reduced through the application of relevant design features and selective mitigation measures.

Impacts on big game habitat, bald eagles and other raptors, and migratory birds in the Fairview Valley area are addressed in Sections 3.2.7.5.4 and 3.2.9.

The BLM continues to work closely with FWS and the Applicant to develop avoidance and minimization measures to reduce effects on avian species based on industry best practices. Design features of the Proposed Action and site-specific selective mitigation measures to reduce effects of the Project on avian species are listed in Section 3.2.9, Mitigation Planning and Effectiveness. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys).

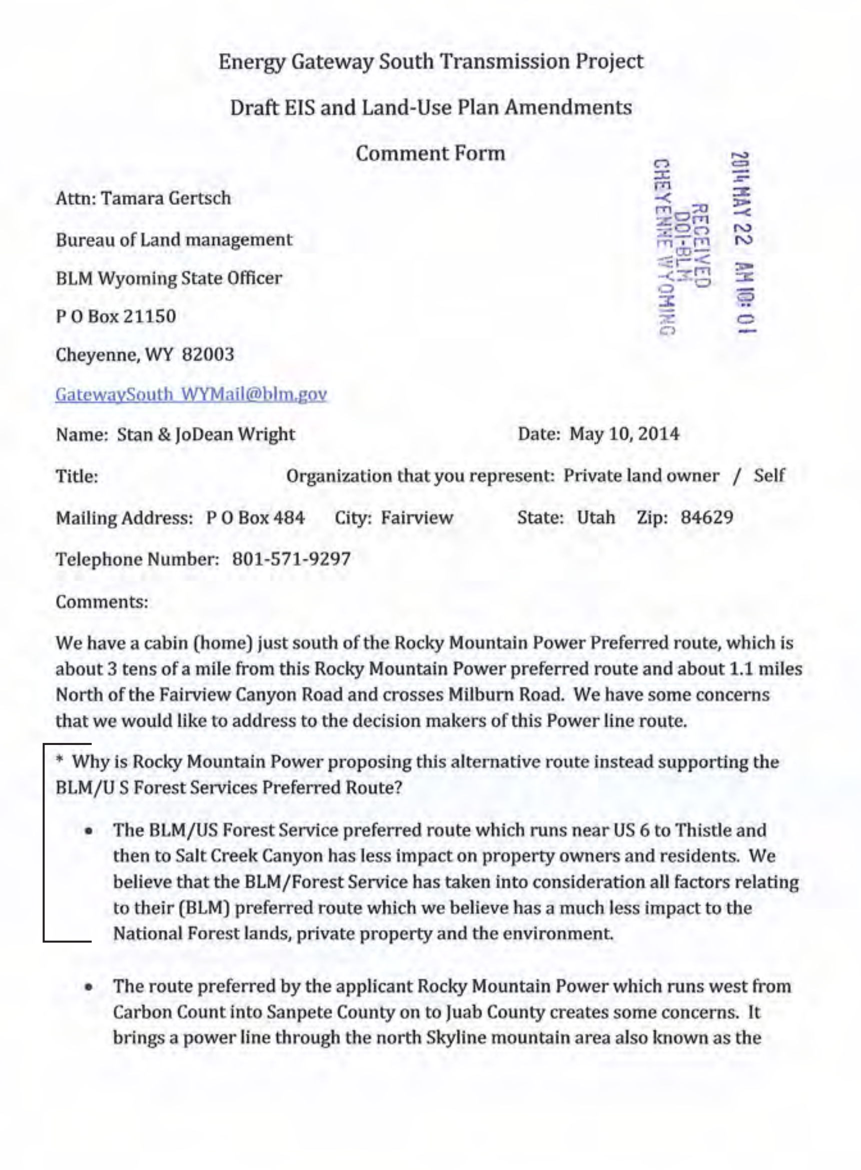
Impacts on big game habitat would be reduced through the application of relevant design features and selective mitigation measures listed in Table 3-80.

I133f

Due to the proximity of residences to the proposed alternative routes across Sanpete Valley adjacent to Fairview and Mount Pleasant, high impacts on these viewsheds were described in the EIS. Selective mitigation measures to reduce these effects were applied to the extent practicable. Based on these high impacts and other resource effects these alternative routes were not selected as the Agency Preferred Alternative.

Comment(s)

I134 **Stan and JoDean Wright**



Energy Gateway South Transmission Project

Draft EIS and Land-Use Plan Amendments

Comment Form

2014 MAY 22 AM 10: 01
RECEIVED
DOI-BLM
CHEYENNE WYOMING

Attn: Tamara Gertsch

Bureau of Land management

BLM Wyoming State Officer

P O Box 21150

Cheyenne, WY 82003

GatewaySouth_WYMail@blm.gov

Name: Stan & JoDean Wright Date: May 10, 2014

Title: Organization that you represent: Private land owner / Self

Mailing Address: P O Box 484 City: Fairview State: Utah Zip: 84629

Telephone Number: 801-571-9297

Comments:

We have a cabin (home) just south of the Rocky Mountain Power Preferred route, which is about 3 tens of a mile from this Rocky Mountain Power preferred route and about 1.1 miles North of the Fairview Canyon Road and crosses Milburn Road. We have some concerns that we would like to address to the decision makers of this Power line route.

I134a

* Why is Rocky Mountain Power proposing this alternative route instead supporting the BLM/U S Forest Services Preferred Route?

- The BLM/US Forest Service preferred route which runs near US 6 to Thistle and then to Salt Creek Canyon has less impact on property owners and residents. We believe that the BLM/Forest Service has taken into consideration all factors relating to their (BLM) preferred route which we believe has a much less impact to the National Forest lands, private property and the environment.

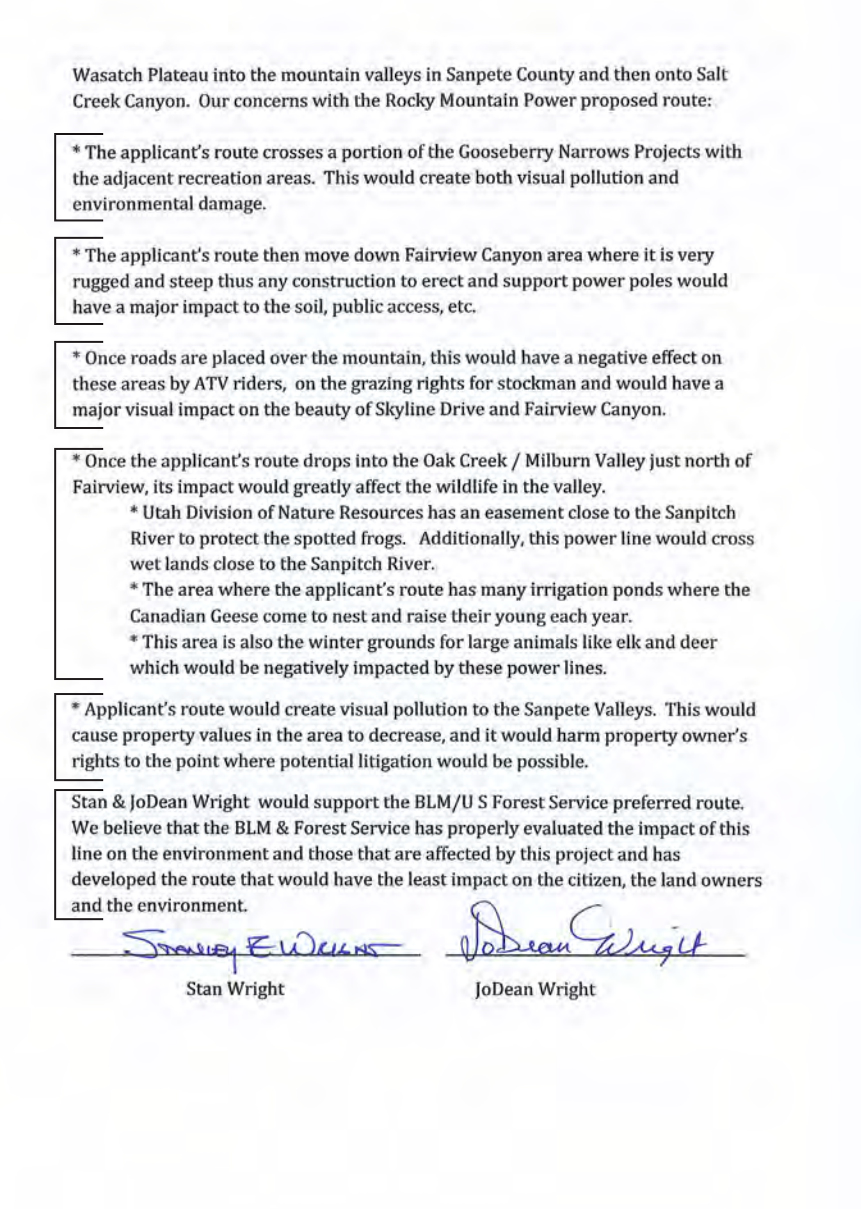
- The route preferred by the applicant Rocky Mountain Power which runs west from Carbon Count into Sanpete County on to Juab County creates some concerns. It brings a power line through the north Skyline mountain area also known as the

Response(s)

I134a Comment and route preference noted. The Applicant's rationale for selecting the Applicant's Preferred Alternative is described in Section 2.7.2.

Comment(s)

I134 **Stan and JoDean Wright (cont.)**



Wasatch Plateau into the mountain valleys in Sanpete County and then onto Salt Creek Canyon. Our concerns with the Rocky Mountain Power proposed route:

I134b * The applicant's route crosses a portion of the Gooseberry Narrows Projects with the adjacent recreation areas. This would create both visual pollution and environmental damage.

I134c * The applicant's route then move down Fairview Canyon area where it is very rugged and steep thus any construction to erect and support power poles would have a major impact to the soil, public access, etc.

I134d * Once roads are placed over the mountain, this would have a negative effect on these areas by ATV riders, on the grazing rights for stockman and would have a major visual impact on the beauty of Skyline Drive and Fairview Canyon.

I134e * Once the applicant's route drops into the Oak Creek / Milburn Valley just north of Fairview, its impact would greatly affect the wildlife in the valley.

- * Utah Division of Nature Resources has an easement close to the Sanpitch River to protect the spotted frogs. Additionally, this power line would cross wet lands close to the Sanpitch River.
- * The area where the applicant's route has many irrigation ponds where the Canadian Geese come to nest and raise their young each year.
- * This area is also the winter grounds for large animals like elk and deer which would be negatively impacted by these power lines.

I134f * Applicant's route would create visual pollution to the Sanpete Valleys. This would cause property values in the area to decrease, and it would harm property owner's rights to the point where potential litigation would be possible.

I134g Stan & JoDean Wright would support the BLM/U S Forest Service preferred route. We believe that the BLM & Forest Service has properly evaluated the impact of this line on the environment and those that are affected by this project and has developed the route that would have the least impact on the citizen, the land owners and the environment.

Stanley E Wright JoDean Wright

Stan Wright JoDean Wright

Response(s)

I134b The Narrows Project is considered a past or present project in the cumulative effects analysis in the Final EIS (rather than a reasonably foreseeable future action). This project is discussed in the Authorized Projects portion of Section 3.2.1, and the Narrows Project recreation area is discussed in Section 3.2.12.

I134c Comment and route preference noted. It is possible that construction of the Project could increase susceptibility to geological hazards in some areas (e.g., in areas with slumps and flows). Thus, avoidance of geologic hazards and engineering constraints criteria were applied in the Applicant's identification of feasible corridors for the siting and construction of transmission lines as part of the design features of the Proposed Action. Potential impacts on the Project resulting from geological hazards are discussed in detail in Section 3.2.2.5. In the analysis, the area around Fairview Canyon was assessed in the EIS as having high susceptibility for landslides.

I134d Selective Mitigation Measure 5 (minimize new or improved accessibility, Chapter 2, Table 2-13) is applied in areas that have been identified as sensitive to unintended use (ATVs), which would be carried forward into the POD. The Applicant is committed to work with agencies and landowners through development of the POD and during implementation and operation of the transmission line. Coordination to limit potential for unauthorized use would occur throughout the life of the Project.

Additionally, design features of the Proposed Action for environmental protection and selective mitigation measures are designed and applied to reduce potential impacts from the Project on recreation resources, grazing uses, and visual resources. Refer to Chapter 2 of the Final EIS for a comprehensive list of the design features (Table 2-8) that will be used for the entire Project and the selective mitigation measures (Table 2-13) that will be used in specific areas along the Project.

Impacts on recreation resources, including ATV riders are discussed in Section 3.2.12. Impacts on grazing allotments are discussed in Section 3.2.11 and Appendix L. Impacts on visual resources are discussed in Section 3.2.18.

I134e See next page for response to I134e.

I134f Due to the proximity of residences to the proposed alternative routes across Sanpete Valley adjacent to Fairview and Mount Pleasant, high impacts on these viewsheds were described in the EIS. Selective mitigation measures to reduce these effects were applied to the extent practicable. Based on these high impacts and other resource effects these alternative routes were not selected as the Agency Preferred Alternative.

I134g Comment and route preference noted.

Comment(s)

Response(s) - continued

I134 **Stan and JoDean Wright (cont.)**

I134e

Additional information regarding two conservation agreements for Columbia spotted frog located near the Sanpitch River (the Nuttall Farms and Crawford Farms conservation easements) have been incorporated into Sections 3.2.10.4 and 3.2.15) and Appendix J of the Final EIS. Preconstruction surveys would be conducted for sensitive species to identify locations where relevant selective mitigation measures and design features would be applied.

Impacts on migratory birds are discussed in Section 3.2.9 and would also be reduced through the application of relevant design features and selective mitigation measures.

Impacts on big game habitat, bald eagles and other raptors, and migratory birds in the Fairview Valley area are addressed in Sections 3.2.7.5.4 and 3.2.9.

The BLM continues to work closely with FWS and the Applicant to develop avoidance and minimization measures to reduce effects on avian species based on industry best practices. Design features of the Proposed Action and site-specific selective mitigation measures to reduce effects of the Project on avian species are listed in Section 3.2.9, Mitigation Planning and Effectiveness. Examples include Design Feature 4 (avian-safe design standards), Design Feature 6 (seasonal restrictions for nesting migratory birds), and Design Feature 7 (breeding bird and nest surveys).

Impacts on big game habitat would be reduced through the application of relevant design features and selective mitigation measures listed in Table 3-80.

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit P8
Form Letter and Postcard

Comment(s)

FL1 Form Letter – Conservation Colorado

Dear Mrs.:

The future of northwest Colorado's wildlife, wildlands, and outdoor economy are important to me and so I appreciate the opportunity to provide public comment on the Bureau of Land Management's (BLM) Draft Environmental Impact Statement (DEIS) for the proposed Gateway South Transmission Line.

FL1a Both the applicant proposed and agency preferred routes present a number of problems due to the fact that the site of the transmission line is proposed predominantly in undeveloped public lands. FL1b It makes far more sense for BLM and PacifiCorp to utilize corridors with existing disturbances such as Highway 13 and Highway 40, along with existing power line right-of-ways. These recommendations, included in Alternative WYCO-D-1, should be adopted into the Final EIS.

FL1c The preferred alternative in the DEIS would not only lead to the degradation of the visual resources along the Little Snake River bluffs and Cross Mountain Wilderness Study Area, it would also destroy and disturb wildlife habitat in a relatively remote area and heavily impact the Lower Little Snake, Deep Canyon and Simsberry Draw Lands with Wilderness Character Units and a substantial amount of acreage of Preliminary Priority Greater sage grouse habitat.

FL1d BLM should also utilize Secretarial Order 3330 when analyzing this project proposal. Utilizing landscape-level mitigation is critical when dealing with such a large and far ranging project such as Gateway South. In particular, BLM should designate Areas of Critical Environmental Concern (ACECs) and backcountry-focused Special Recreation Management Areas (SRMAs) as mitigation for the lands impacted by the transmission line.

FL1e I also urge BLM to be cognizant and respectful to private property owners along all proposed routes, especially those that have placed their property under conservation easements in order to protect the wildlife resources unique and important to Coloradans.

Thank you for your consideration.

Sincerely,

Response(s)

FL1a The first two criteria considered by PacifiCorp, doing business as Rocky Mountain Power (Applicant), when identifying preliminary alternative routes during their initial feasibility studies conducted by the Applicant included (1) presence of designated or proposed utility corridors and (2) presence of other existing linear facilities. During their review of the alternative routes, the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) have endeavored to maintain the use of federally designated utility corridors and the use of federal lands to the extent possible (i.e., where suitable when reviewing for environmental, geographic, or engineering/electric system reliability concerns). However, federal land is not contiguous. Ultimately, the BLM and USFS selection of the preferred alternative must be based on resource sensitivities and resource issues.

FL1b Comment and route preference noted. See also response to Comment FL1a.

FL1c Impacts on views from the Cross Mountain Wilderness Study Area were assessed in Section 3.2.18 and supported by a simulation developed from Key Observation Point #299 (East Cross Mountain River Access) in Appendix M. Effects on scenic quality along the Little Snake River is discussed broadly in Section 3.2.18; and due to the presence of non-wilderness study area lands with wilderness characteristics adjacent to the river, in further detail in Section 3.2.16. The impacts on the Lower Little Snake, Deep Canyon, and Simsberry Draw lands with wilderness characteristics inventory units are discussed in Section 3.2.14. Project effects on priority sage-grouse habitat are discussed in Section 3.2.8.

FL1d See next page for response to Comment FL1d.

FL1e See next page for response to Comment FL1e.

Comment(s)

Response(s) - continued

FL1 **Form Letter – Conservation Colorado (cont.)**

FL1d The Environmental Impact Statement (EIS) contains mitigation measures designed to avoid, reduce, or minimize moderate or high impacts on a variety of resources. Per Appendix E of the Final EIS, the sequence of mitigation action for any resource impacts would be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate) as identified by the White House Council on Environmental Quality (40 Code of Federal Regulations 1508.20) and BLM's Draft - Regional Mitigation Manual Section 1794. That is, the priority is to mitigate impacts at the site of the activity (in conformance with the land-use plan goals and objectives) through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and land-use plans. When these types of mitigation measures are not sufficient to ameliorate anticipated direct, indirect, and cumulative impacts and substantial or significant residual impacts remain, additional measures to reduce these residual impacts to meet applicable land-use plan goals and objectives would be required (compensatory mitigation). Based on the analysis in the EIS, the BLM, in coordination with cooperating agencies, will make a determination if compensatory mitigation measures are necessary for any resource and, if so, will establish resource-specific guidelines for application and enforcement of these measures in the Record of Decision. BLM intends to use a third-party Compliance Inspection Contractor to monitor and enforce the requirements of the right-of-way grant. Compliance information prepared by the Compliance Inspection Contractor is made available, as part of the public record by project, for review.

FL1e Potential impacts on conservation easements identified within the 2-mile-wide alternative route study corridor are documented in Section 3.2.15. The management prescriptions of these conservation easements have been considered in the analysis. Where possible, the alternative routes and route variations have been adjusted to avoid direct impacts on these easements. If the alternative route or route variation would impact an easement, selective mitigation measures (e.g., seasonal limitations on construction) have been identified to reduce impacts on the easement.

Comment(s)

FL1

Form Letter – Conservation Colorado (cont.)

Dear Mrs. – Form Letter One – Index

August 13, 2014

Akers-Lewis, Anne
Allee, Lisa
Anderson, Jon
Anderson, Kayce
Anderson, Kristen
Arden, Terra
Armstrong, John
Arndt, Laura
Asnicar, Elizabeth
Audesirk, Teresa
Babcock, Reb
Back, H
Backlund, J
Bailey, J
Baker, M
Barr, D
Barrett, W
Behrens, Carla
Benham, Judy
Black, Karina
Bopardikar, Christine
Bossert, Elizabeth
Bradt, Barbara
Brazy, Roberto
Bremner, Steve
Briscoe, Rochelle
Bronner, Dennis
Bronzan, C.T.
Brookstein, Jesse
Brown, Mike
Burnett, Robert
Burns, David
Burns, Robert
Bushnell, Martha
Butler, William
Carnein, Carol
Carper, Robert
Carr, Kathleen
Carren, Claire
Carson, Catherine
Carter, Beth
Carter, Grace
Cerise, Jessica

Chambers, Leland
Chandranatha, Rakesh
Chockla, Bill
Christian, Kathryn
Church, Mary Lou
Cipperly, Carolyn
Cleavenger, Brad
Cleveland, J
Cline, David
Colleran, Patrick
Collins, Teresa
Cone, Janice
Connor, Carol
Cornell, Jennifer
Cortez, Kristin
Cote, Diane
Coulter, Sara
Cunningham, Kirkwood
Curtin, Linda
Davis, CJ
Davis, Kathy
Dean, S
DeAntoni, Carol
Dewey, N
Du Mont, Lynette
Duell, C
Dvorak, Bill
Eckler, J
Edgerton, Craig
Edwards, M
Elam, Marianne
Ellenberger, D
Engelman, Beth
Evans, C
F., Amy
Farthing, S
Fenster, Dustin
Field, B
Fox-Perry, Judy
Frankell, L
Freed, Emily
Freestone, M
Friestad, John

Frohboese, Karil
Fuller, S
Garcia, Trish
Gibas, L
Giese, Mark
Goodrich, L
Groll, Stacie
Hansen, A
Harden, Ronald
Harding, S
Harlow, Nancy
Hart, K
Hastings, Neil
Hayes, J
Heinrichsdorff, Gernot & Ava
Henderson, D
Henke, Charlene
Hieber, LD
Hillesland, Lisa
Hillman, J
Hillson, Miriam
Hoehlein, J
Hoffmann, John
Homdahl, K
Huber, Diane
Hvoslef, E
Ikeda, Ginger
ImMasche, S
Ingham, Lula Kay
Ingram, K
Isaacs, John
Jacobson, Art
Jaime, N
Jakson, T
Jenkins, William
Jennemann, D
Johnson, Stephanie
Jorgenson, C
Kassoff, Jason
Keefe, C
Keller, A.
Keogh, T
Khristoforov, Mylee

Dear Mrs. – Form Letter One – Index

August 13, 2014

King, Fiona
Kirk, J
Kirkpatrick, Jon
Koeheler, L
Korte, Mary
Koss, J
Krueger-Koplin, Suzanne
Ku, M
Kurtz, Maya
Lampke, K
Leigh, Tracy
Levitt, R
Lewis, Mac
Lilly, N
Lisowski, Lois
Little, W
Livingston, Joe
Loeb, L
Loza, Michelle
Luetkemeir, K
MacCarthy, Robert
Mackey, Angie
MacTavish, J
Magnuson, Barbara
Marquardt, M
Marxuach, Antonio
Massaro, R
Masters, Laura
Masters, Pam
Masur, James
Mateja, B
Mattingly, Georgia
McAffee, O
McCoy, Hazel
McCune, S
McElnea, Barbara
McGinty, A
McGrew, Joanne
McGuire, M
McHenry, Sue
McKee, R
McMath, Stephen
McMurray, T

Melamed, P
Mendez, Javier
Merrill, N
Michl, S
Miller, J
Miller, L
Miterko, N
Mohanty, L
Monaco, C
Monroe, V
Moore, T
Morris, R
Mountford, M
Murphy, S
Murray, S
Myers, J
Nading, Toni
Nardell, Jason
Nazzaro, A
Neal, N
Nedell, S
Nethers, J
Nix, Brenda
O'Brien, B
O'Keeffe, Jennifer
Oken, T
Olin, Lois
Olson, D
Ortiz, Erik
P., E.
Pace, S
Paden, Donald
Pargiter, J
Parker, Doug & Jan
Parker, N
Peirce, S
Pena, Lizette
Persico, Y
Peszek, Iza
Platt, C
Plutschuck, Donna
Porcher, J
Powers, Linda

Quinlan, Lola
Raitman, B
Ralston, Aron
Ray, S
Reeves, Peggy
Rosa, N
Rose, Katheryn
Ross, G
Rutigliano, Janet
Ryan, D
Ryan, Robert
Sabin, J
Saccardi, John
Saunders, G
Scheib, Curtis
Scheller, S
Schimberg, Tim
Schmidt, C
Shafroth, Catherine
Shemo, B
Shepard, Randall
Shotwell, A
Shulman, Joseph
Singer, D
Singer, Paige
Sisk, S
Slivka, Terri
Smith, D
Smith, Jean
Smith, L
Soto, Elaine
Spain, J
Speer, Greg
Spence, L
Stark, Erin
Starr, L
Starrs, Tanai
Staufer, J
Stevens, Amanda
Steward, J
Stimac, Vickie
Storey, P
Stout, Greg

Comment(s)

FL1 Form Letter – Conservation Colorado (cont.)

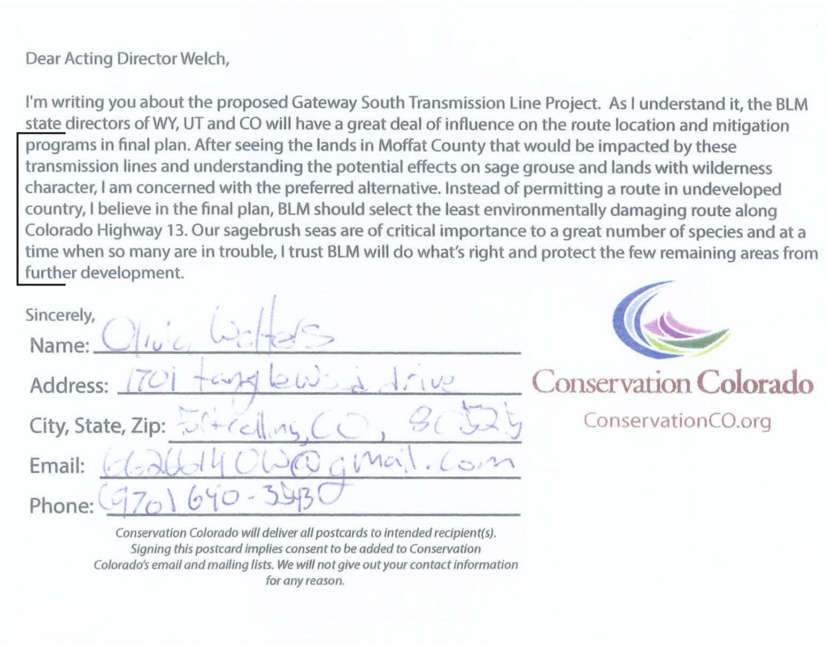
Dear Mrs. – Form Letter One – Index

August 13, 2014

Tagge, Betty
Talbot, E
Teklu, Axum
Tempelman, S
Theelen, Aimee
Thompson, S
Thrailkill, James
Thurston, J
Titone, Theresa
Tixier, S
Tobin, Dan
Toretta, R
Trench, Karen
Tripp, T
Twelvetrees, Jennifer
Uehelher, W
Vance, Priscilladean
VanFleet, J
Vena, Skip
Victor, J
Voss, Stephanie
Vyhnal, Kristin
Wagner, J
Walker, Mike
Weber, G
Welch, Patricia
White, W
Whitmore, Dara
Wilkop, L
Wilsey, Lynn
Woodmansee, S
Yazzie, Genevive
Yazzie, J
Yeomans, Gary
Yeomans, Gary
Zavattero, Cameron
Zimmerman, J

Comment(s)

FL2 | **Postcard – Conservation Colorado**



Dear Acting Director Welch,

FL2a

I'm writing you about the proposed Gateway South Transmission Line Project. As I understand it, the BLM state directors of WY, UT and CO will have a great deal of influence on the route location and mitigation programs in final plan. After seeing the lands in Moffat County that would be impacted by these transmission lines and understanding the potential effects on sage grouse and lands with wilderness character, I am concerned with the preferred alternative. Instead of permitting a route in undeveloped country, I believe in the final plan, BLM should select the least environmentally damaging route along Colorado Highway 13. Our sagebrush seas are of critical importance to a great number of species and at a time when so many are in trouble, I trust BLM will do what's right and protect the few remaining areas from further development.

Sincerely,

Name: Olivia Walters

Address: 1701 tanglewood drive

City, State, Zip: Fort Collins, CO, 80525

Email: 662614OW@gmail.com

Phone: (970) 640-3543

Conservation Colorado

ConservationCO.org

Conservation Colorado will deliver all postcards to intended recipient(s). Signing this postcard implies consent to be added to Conservation Colorado's email and mailing lists. We will not give out your contact information for any reason.

Response(s)

FL2a

The first two criteria considered by the Applicant when identifying preliminary alternative routes during their initial feasibility studies conducted by the Applicant included (1) presence of designated or proposed utility corridors and (2) presence of other existing linear facilities. During their review of the alternative routes, the BLM and USFS have endeavored to maintain the use of federally designated utility corridors and the use of federal lands to the extent possible (i.e., where suitable when reviewing for environmental, geographic, or engineering/electric system reliability concerns). However, federal land is not contiguous. Ultimately, the BLM and USFS selection of the preferred alternative must be based on resource sensitivities and resource issues.

Comment(s)

FL2

Post Card – Conservation Colorado (cont.)

Conservation Colorado – Form Letter Two – Index

May 22, 2014

Walters, Lauren
Skowrorski, C.J.
Smith, Nancy
Walters, Olivia
Walters, Will
Barr, Amy
Tannenbaum, Jalsuie
Cortez, Kristin
Gustin, Marjorie
Huyler, Frank
Kennedy, Andy
Jair, Carla
Carson, Catherine
Hoob, Steve
Hagenbuch, Todd
Spezia, John
Rogers, Emilie
Vandesteene, Dana
Fortier, Denise
Decker, Steve
Tucer, Julie
Crites, Susan
Stocker, Robert
Stocker, Nancy
Bruce, Susan
Collins, Ken
Ford, Kall
Collins, Carol
Woodmause, Sarah
Seivka, Juli
Woodmanola, Katherine
Jones, Judy
Maynard, Carol
Harbule, Steve
Irons, Bill
Ebeosole, Jim
Phipps, Alan
Schaenecker, Bill
Hale, Jennifer
McKim, Michelle
Jones, Richard
Wright, Dan
Hudson, Stephanie
Schroeder, David
Harris, Edson
Plybon, Jon
Steiner, Noreen
Plybon, Sandra
Fielder, Adrian
Evitt, Jason
Harris, Mary
Kurt, Carol
Malone, Devia
Lichel, Tay
Liebel, P.
Vidal, Linda
Faison, S.Lane
Huggins, Jamie
Rehweldt, Ellen
Brandon, C.
Bachman, Geneieve
Spencer, Emily
Bachman, H.Adele
Hale, Royce
Schroeder, Virginia
Ringler, Michael
Wedman, Clara
Billings, George
Kaplin, Shara
Moffatt, Dean
Brandon, Cherye
Jauhola, Chris
Wildzen, Joe
Pilzs, Elaine
Bonnet, Carol
Burch, Janice
Olson, Brian
Buster, Katey
Parker, Fran
Schunk, Sherry
Kelleher, Cathy
Phil, Elaine
Olson, Jayce
McDuff, Charles
Cadil, Judith
Corde, Peter
Wharton, Del
Cordel, Judy
Lanci, Jesse
Hayden, Luke
Eark, Debbie
Knight, Susan
Kappe, Robert
McDuff, Dan
Potyen, Paul
Leon, Samuel
Sandmann, Mary
Fineran, Marilyn
Wall, G.
Morrison, Richard
Condon, Thomas
Hughes, Barbara
Mitchell, Ron
Morrison, Helga
Heacock, Travis
Kellogg, Karen
Jones, Taylor
Magnuson, Barbara
Kimbell, Larry
Mitchell, Jeannie
Shipe, Aaron
Ferber, Dick & Donna
Sprague, Dick
Baker, Michelle
Mieder, G.
Borland, Angela
Hatch, Floyd
Gene, Judi
Brummert, Karl
Hartmann, Anita
Burk, Abby
Larson, Tanya
Griffin, Mildred
Bailey, O'Connor
Pedrow, Gordon